MC-860 / CX2633MFP

Service & Troubleshooting Guide

080309C

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Chapter 1 Maintenance Procedures – Printer / ADF / Scanner

1.1 Exterior Cleaning
1.2 Cleaning the LED lens array
1.3 Cleaning the Pickup Roller
1.4 Cleaning inside the Printer
1.5 Cleaning the ADF and Scanner

Chapter 2 Service Menus and Adjustments

2.1 How to Enter the Service Menu
2.2 Service Maintenance Menu Overview
2.3 System Maintenance
2.4 Panel Maintenance
2.5 Scanner Maintenance
2.6 Fax Maintenance
2.7 Printer Maintenance
2.7.1 Switch Scan Test
2.7.2 Motor & Clutch Test
2.7.3 Test Print - Monitoring Printer Environmental Conditions
2.7.4 Color Registration Error Correction Test
2.7.5 Density Error Correction Test
2.7.6 Consumable Item Counter Display
2.7.7 Factory/Shipping Mode Switching
2.7.8 Engine Parameter Setting – Fuse Check Method
2.8 Initialization Functions

Chapter 3 Troubleshooting Print Quality

3.1 Print Quality Problems Overview
3.2 Using New Consumable Units for Testing Purposes
3.3 Things to observe when analyzing Test Pages
3.4 Print-Quality Troubleshooting

Chapter 4 Troubleshooting Paper Feeding

4.1 Troubleshooting Paper Feed
4.1.1 Paper Feed Sensor Details
4.1.2 Jam Removal Procedure

Chapter 5 Troubleshooting Error Codes

Chapter 1 Maintenance Procedures – Printer

1.1 Exterior Cleaning

Clean inside and outside of the printer with a clean dry cleaning cloth and small vacuum cleaner as required.

Note! Be careful not to touch the image drum terminals, the LED lens array and the LED head connectors.

1. Turn OFF the power of the MFP.

Select “Setup” then “Shutdown”. Follow the on screen prompts. When shutdown is complete, turn off the power switch on the printer.

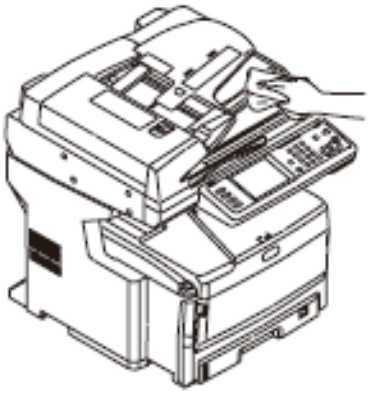
2. Clean the surface of MFP.

Note! Do not use any liquid other than water and neutral detergent.

The MFP requires no lubrication.
Do not lubricate the unit.

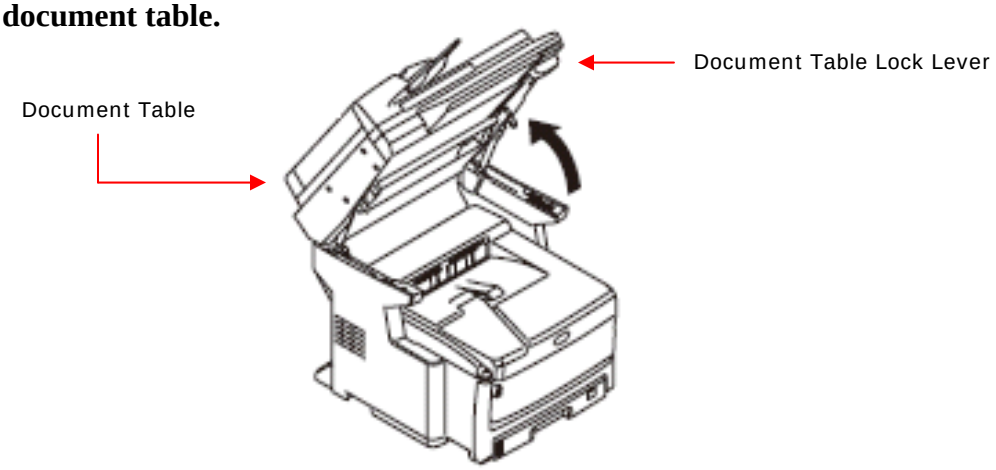
Clean the surface of the unit with a clean cloth wrung out using clean water or neutral detergent.

Clean surface of the unit with soft clean cloth.

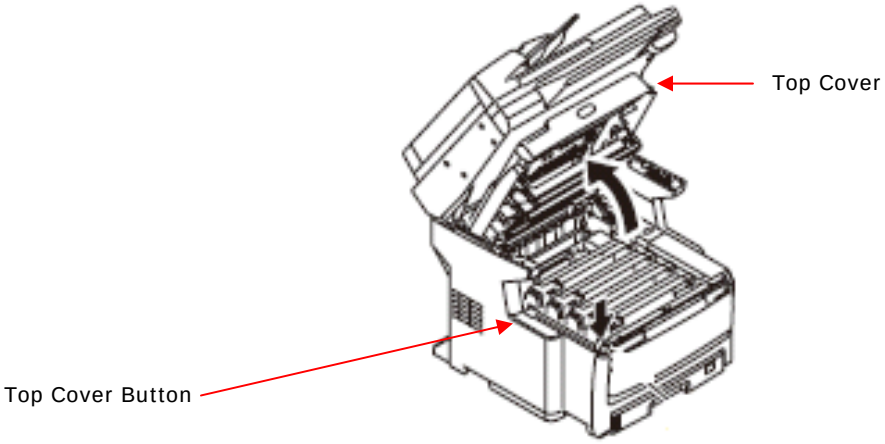


1.2 Cleaning the LED lens array

- **Pull the document table lock lever to the front to release the lock, and raise the document table.**

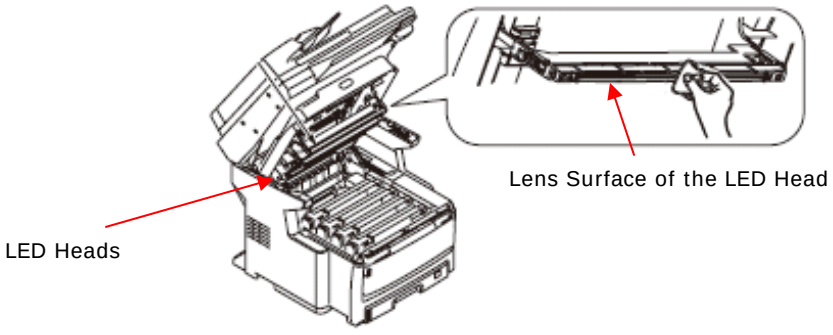


- **Press the top cover button and open the top cover.**



Caution Failure to proceed with caution may result in burn injury. The fuser unit gets very hot. Do not touch the surface of the fuser unit.

- **Wipe the lens surface (at the four positions) of the LED head with soft tissue paper gently and lightly.**

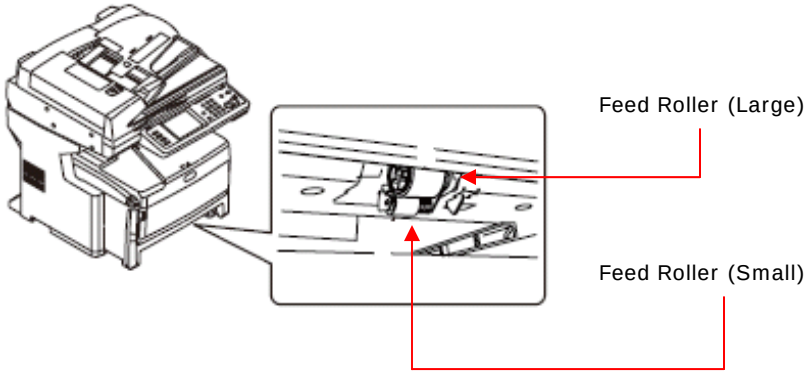


1.3 Cleaning the Pickup Roller

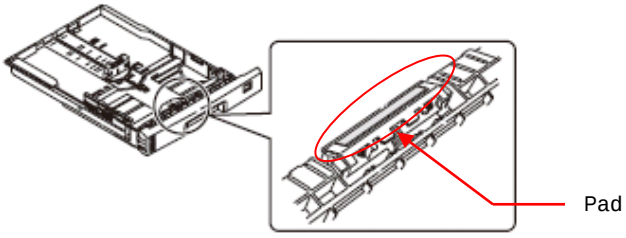
Note! Clean the pickup roller for tray 2 and tray 3 in the same procedure.
For the MP tray, clean the pickup roller in the same procedure for the feed roller only.
(Pad is not used.)

- **Pull out the tray.**

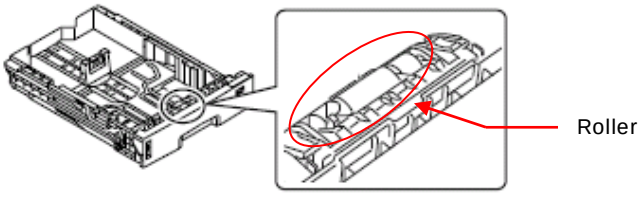
- **Clean the feeder roller (large) and the feeder roller (small) with a clean cloth wrung out using clean water**



- **Clean the pad portion of the tray with a clean cloth wrung out using clean water**



Tray 1

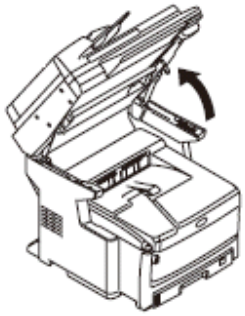


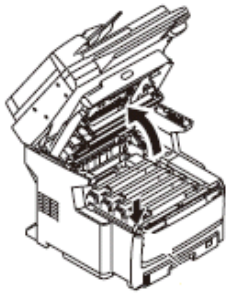
Tray 2, Tray 3

1.4 Cleaning inside the Printer.

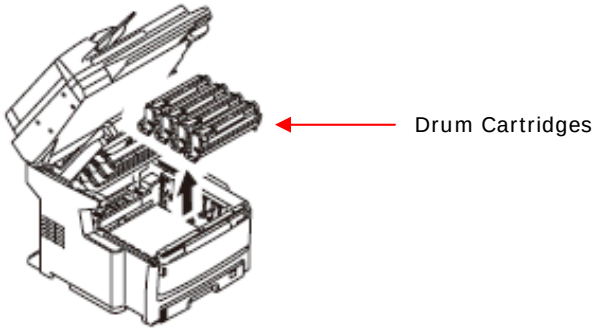
Toner can adhere to the metal shaft that is located in between the fuser and the cyan image drum cartridge depending on the print pattern. Perform cleaning of the inside of the MFP if toner has adhered to the metal shaft.

- **Turn OFF the power of the MFP.**
- **Pull the document table lock lever to the front to release the lock, and raise the document table. Then Press the top cover button and open the top cover.**





- **Remove the four image drum cartridges from the MFP.**



- **Cover the removed image drum cartridge with a black paper.**

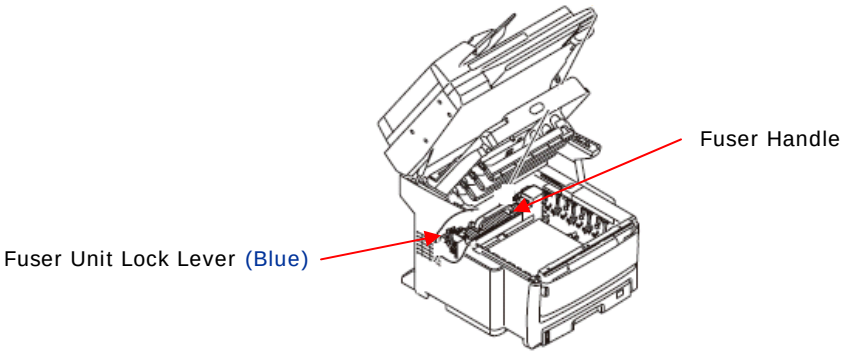
Note! Use caution when handling the image drums. Be very careful not to expose the image drum to direct sun light or intense light. Do not leave it out under normal illumination even indoors for 5 minutes or longer**.**

- **Remove the fuser unit from the MFP.**

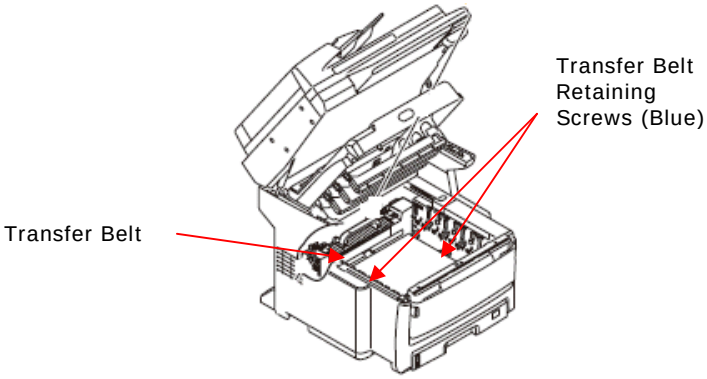
Caution Failure to proceed with caution may result in burn injury. The fuser unit gets very hot. Do not touch the surface of the fuser unit.

- **Raise the fuser unit lock lever (shown in blue) in the direction shown by the arrow.**

- **Hold the handle of the fuser unit and remove it.**



- **Remove the Transfer Belt unit from the MFP.**

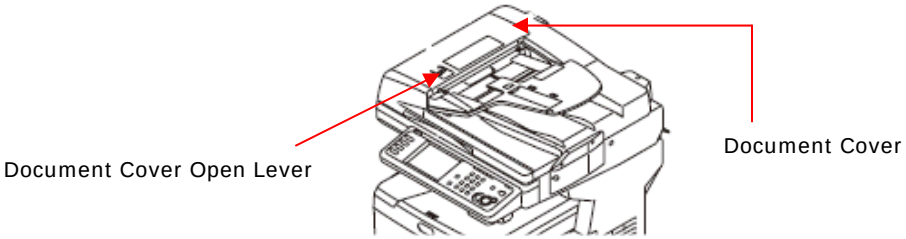


- **Thoroughly clean the interior of the printer and re-install the transfer belt, fuser, and drum units. Inspect all units before re-installation.**

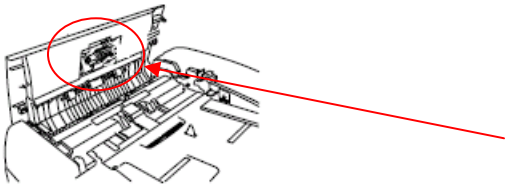
1.5 Cleaning the ADF and Scanner

Clean the paper path of the ADF once every month or more in order to maintain high print quality and to transport the documents smoothly.

- **Open the document cover OPEN lever and open the document cover.**



- **Clean the document transport roller.**



Clean surface of the roller with a clean cloth wrung out using clean water or neutral detergent.

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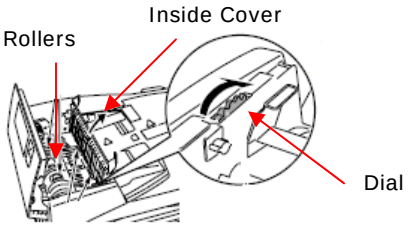
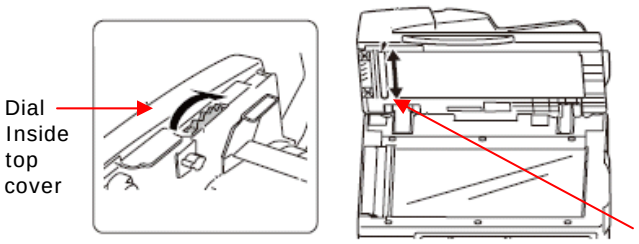
Note! Clean the entire surface of the roller by rotating the roller by hand.
(Some types of rollers can rotate in one direction only.)

- **Open the inside cover.**



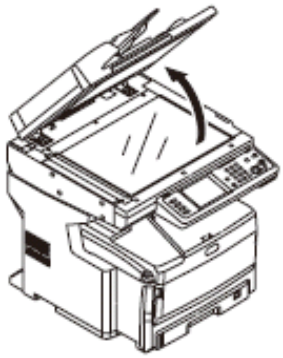
Clean surface of the roller with a clean cloth wrung out using clean water or neutral detergent.

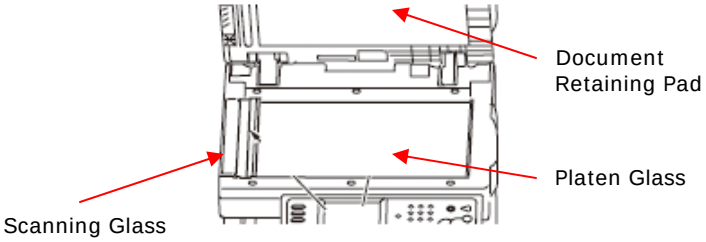
- **Clean the document retainer roller.**



Clean surface of the roller with a clean cloth wrung out using clean water or neutral detergent.

- **Open the document table cover.**





Clean the surface of the document retaining pad, the platen Glass and the scanning glass with a clean cloth wrung out using clean water or neutral detergent.

Chapter 2 Service Menus and Adjustments

The service function is to be used for the purposes of MFP maintenance by the experienced Maintenance / service engineer, and are not open to general users. The respective items of the service function are contained in the service menu.

2.1 How Enter the Service Menu

Enter the service menu by the following operation.

1. The password entry screen is displayed when the special operation of the hardware keys is operated while an MFP is running. The MFP enters this condition waiting for password entry.

2. When the password that is entered by maintenance/service engineer matches the specified password, the service menu is displayed.

Special Operation of the Hardware Keys

The operation procedure to display the password entry screen of the service menu is described as follows.

1. To display the password entry screen, press the [SETUP] key while an MFP is running.

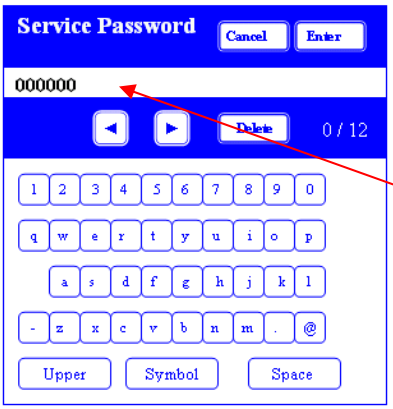
2. Press the numeric keys in the order of [#] [1] [9] [3] [7].

3. The password entry screen is displayed.

Password Entry Screen

Value Default Display Condition

Enter the password that is required to enter the service menu. (OOOOOO) (Six zeros).

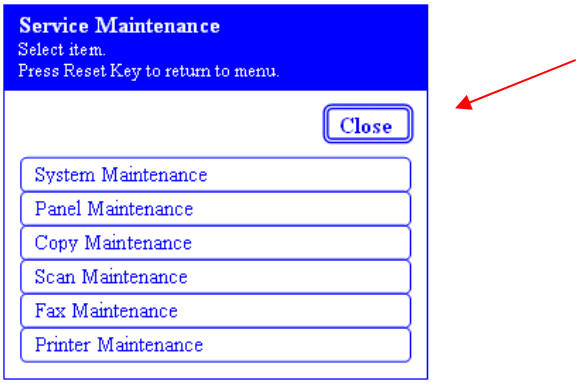


Note! Data entry will appear as Asterisks.

Caution! The Password can be changed by the "Change Password" menu of the "System Maintenance" menu. It is highly recommended that you ***DO NOT*** change this password. In the event that the changed password is lost, the main control board and hard disk drive would need replacement. This is not a covered expense under any machine warranty and you will incur the cost of the replacement components.

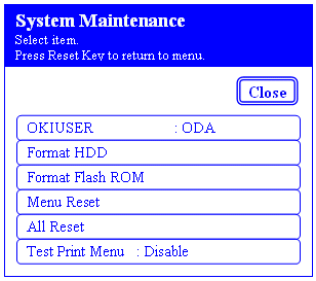
Operation required to exit the Service Mode Screen

In order to complete operations of the service menu, the [Close] button that is displayed on the service menu top screen should be pressed.

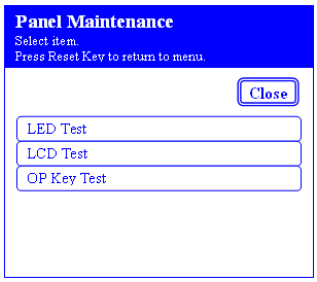


Note! If any setting change requires reboot of the MFP and the [Close] button is pressed, the MFP will enter the normal operating condition after the MFP reboots.

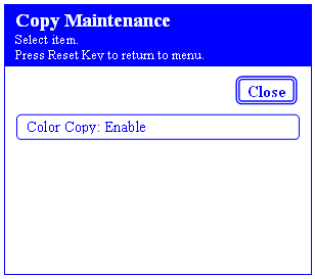
2.2 Service Maintenance Menu – Overview



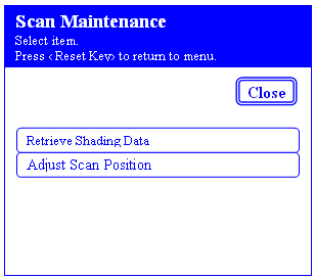
System Maintenance Screen



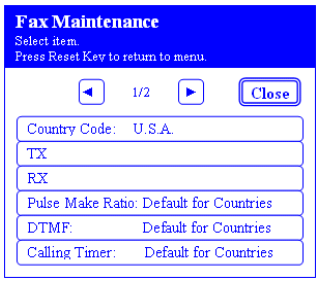
Panel Maintenance Screen



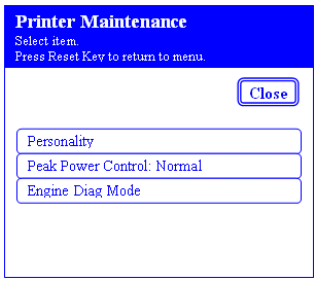
Copy Maintenance Screen



Scan Maintenance Screen



Fax Maintenance Screen



Printer Maintenance Screen

Service Maintenance Menu Structure is shown below.

Level 1	Level 2	Level 3	Level 4	Reboot Process
System Maintenance (See Section 2.3)	OKIUSER			When Closed
	Format HDD			When Executed
	Format Flash ROM			When Executed
	Menu Reset			None
	All Reset			When Executed
	Test Print Menu			When Closed
	Change Password	New Password		When Closed
		Verify Password		When Closed
Panel Maintenance (See Section 2.4)	LED Test			None
	LCD Test			None
	OP Key Test			None
Copy Maintenance	Color Copy			When Closed
Scan Maintenance (See Section 2.5)	Retrieve Shading Data			None
	Clean RADF Roller			None
	Adjust Scan Position	FBS	Side Reg.	None
			Front Edge	None
		ADF (Front)	Side Reg.	None
			Front Edge	None
			Back Edge	None
		ADF (Back)	Side Reg.	None
			Front Edge	None
			Back Edge	None
Fax Maintenance (See Section 2.6)	Country Code			When Closed
	TX	Echo support		None
		Modem transmission speed		None
	RX	Echo support		None
		Modem transmission speed		None
	Pulse Make Ratio			None
	MF(Tone) Duration	ON period		None
		Off Period		None
	Calling Timer			None
	Attenuator			None
	MF Attenuator			None
	Line Test	Relay		None
		Tonal		None
		DTFM		None
Printer Maintenance (See Section 2.7)	Personality	IBM 5577		When Closed
		IBM PPR III XL		When Closed
		EPSON FX		When Closed
		HP-GL/2		When Closed
	Peak Control			When Closed
	Engine Diag. Mode			When Closed

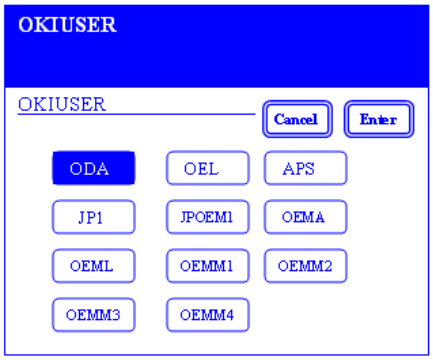
Supplementary Description of "Reboot Process"

When Closed	Reboot starts automatically when the [Close] button is pressed on the top screen of the service menu.
Reboot when executed	Reboot starts automatically when the function is executed.
None	Reboot is not executed and the screen moves into the normal operating condition when the [Close] button is pressed on the top screen of the service menu.

2.3 System Maintenance

OKIUSER

Sets the MFP for the Destination Country.



Note! **Should always be set for ODA** (North America). Settings other than ODA may result in erratic MFP operation. When the screen exits the service menu after this setting is changed, the MFP reboots automatically.

Format HDD

Initialization of the HDD.

When [Format. HDD] is selected, the following confirmation screen is displayed.
When [Yes] is selected, the screen exits the menu and initialization of the HDD starts.

For details of the HDD initialization, refer to Section 2.8.

Format Flash ROM

Initialization of the Flash ROM.
When [Format Flash ROM] is selected, the following confirmation screen is displayed. When [Yes] is selected, the screen exits the menu and initialization of the resident mounted (on-board) Flash device starts.

For details of the Flash ROM initialization, refer to Section 2.8.

Menu Reset (Administrator Password Reset)

Returns the administrator password to the factory shipment setting (factory default) value. When [Menu reset] is selected, the following confirmation screen is displayed. When [Yes] is selected, the administrator password is reset to the factory shipment setting (factory default) value.

For details of the administrator password reset, refer to Section 2.8.

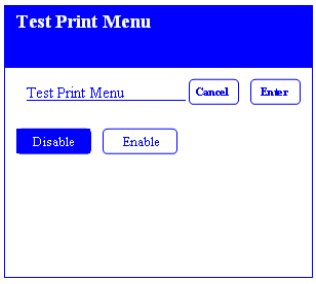
All Reset

Returns the contents of the EEPROM, FLASH ROM and HDD to the factory shipment setting (factory default) value. When [All Reset] is selected, the following confirmation screen is displayed. When [Yes] is selected, the screen exits the menu, and contents of the EEPROM, FLASH ROM and HDD are reset to the factory shipment setting (factory default) value.

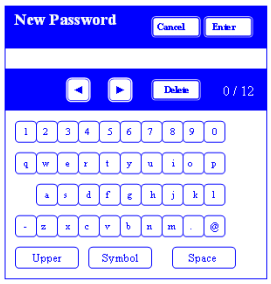
For details of the reset to the factory shipment setting, refer to Section 2.8.

Test Print Menu

Selects to display or not to display the menu [REPORT] – [PRINT] – [ID Check Pattern] item, and [Engine Status] item. When [Disable] is selected in this setting, the [ID Check Pattern] and [Engine Status] items are not displayed all the time. When the screen exits the service menu after this setting is changed, the MFP reboots automatically.



Change Password



Note! The Password can be changed by the "Change Password" menu of the "System Maintenance" menu. It is highly recommended that you ***DO NOT*** change this password. In the event that the changed password is lost, the main control board and hard disk drive would need replacement. This is not a covered expense under any machine warranty and you will incur the cost of the replacement components.

2.4 Panel Maintenance

LED Test

All LED lamps are illuminated to check if any lamp is burned out or not.
Every time when the [SETUP] key is pressed, all LED lamps are turned ON and OFF.

Operating procedure

LED lamp = OFF

Red LED lamp = ON

Green LED lamp = ON

All LED lamps = ON

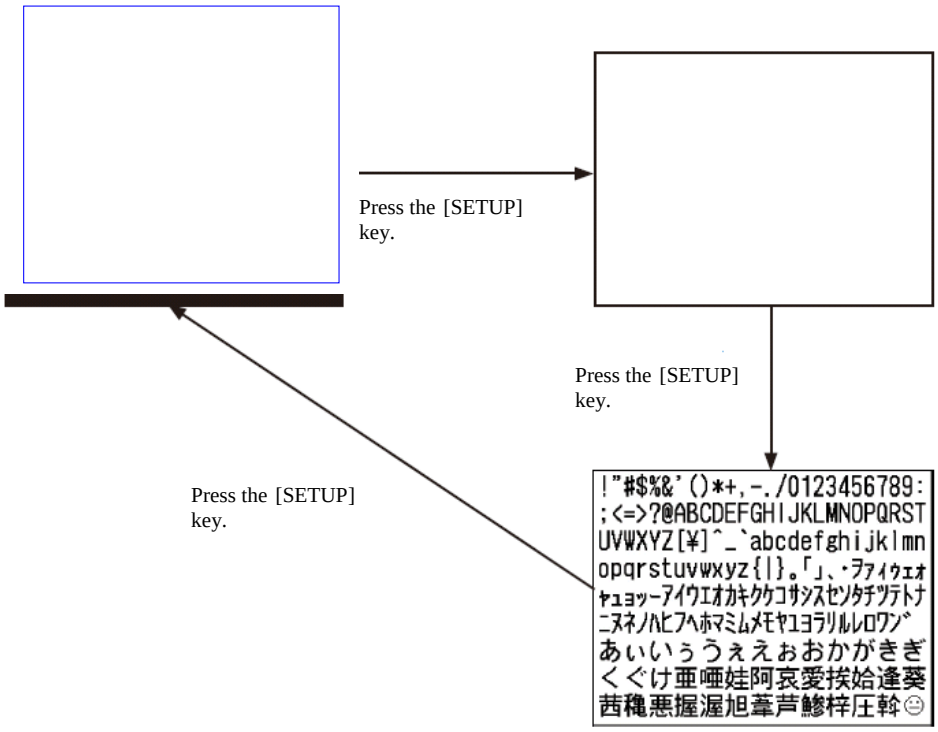
When the [Close] button is pressed, the screen returns to the panel maintenance menu.

LCD Test

Displays the test pattern on the LCD in order to check if there are inactive pixels on the LCD.

Operating procedure

The following three kinds of test patterns can be displayed. To select the test patterns, press the [SETUP] key.

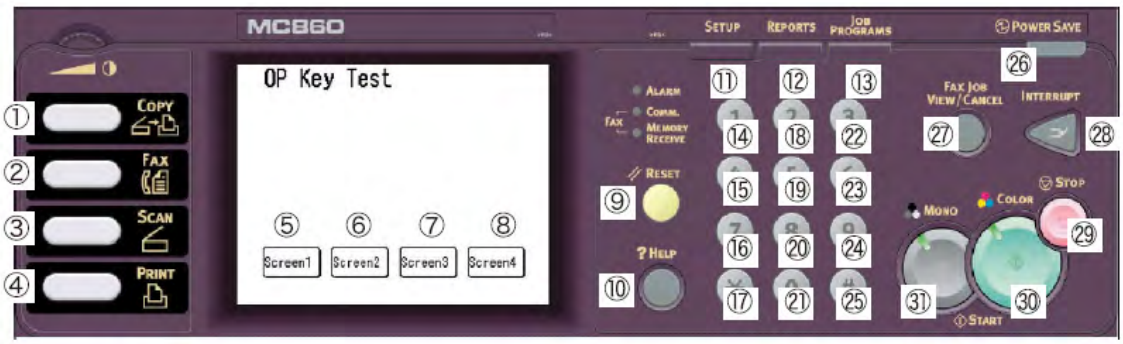


Control Panel Key Test

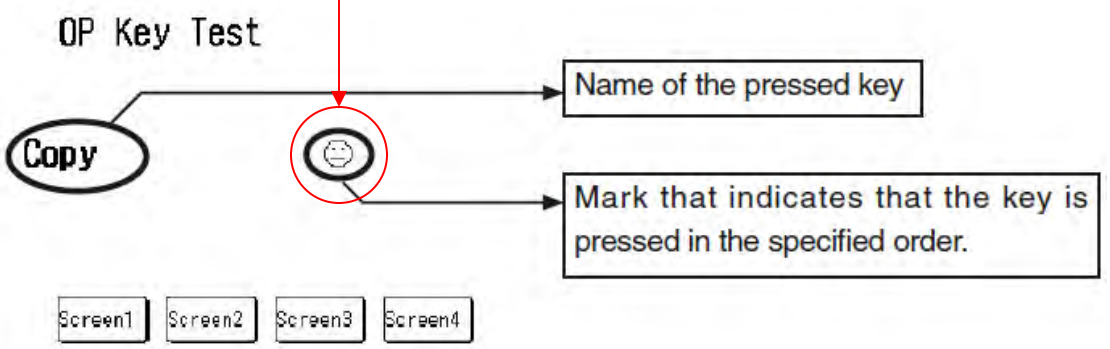
Checks if the MFP responds normally when the hardware key and the software key on the control panel is pressed, by observing the LCD screen if the pressed key is displayed or not on the LCD screen. This test aims at checking all of the keys. Therefore, all keys should be pressed in the **specified order** in order to check that all keys have been pressed.

Operating procedure

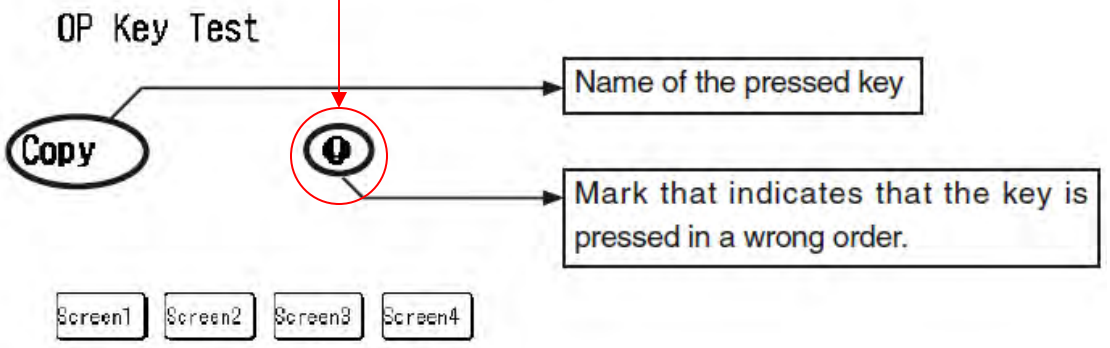
When this test is selected, the panel key test screen is displayed as shown below. Press all of the keys in the **specified order** as shown in the picture below.



When a key is pressed in the specified order, the following messages are displayed.



When a key is pressed in a wrong order, the following messages are displayed.



2.5 Scanner Maintenance

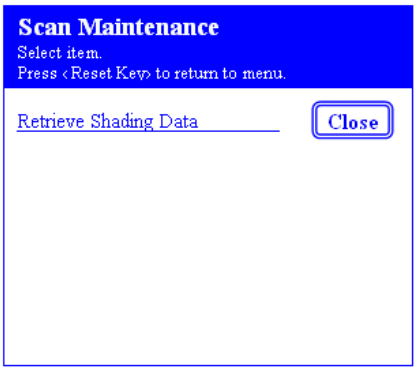
Shading Data Loading

Shading data of FBS and that of RADF (both-side copy model only) are loaded. This item should be executed whenever any of the following items is performed.

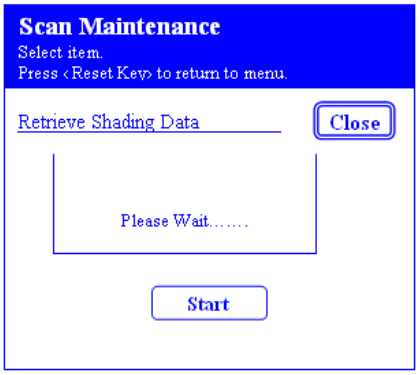
- When the scanner lamp is replaced *
- When the mirror carriage adjustment is performed *
- When the scanner Main PCB is replaced

Operating procedure

When this item is selected
the following screen is displayed.

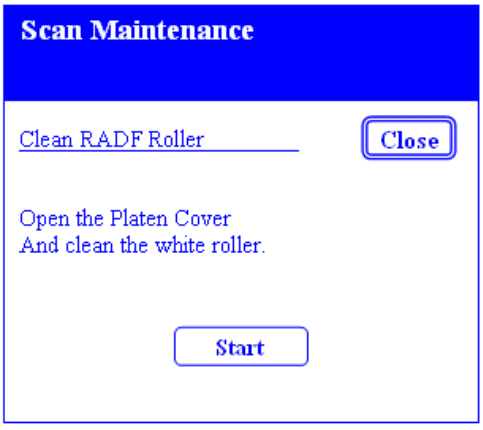


Confirm that the RADF unit is closed.
Then press the [Start] button.



Scanning Roller Cleaning

Operating procedure
When this item is selected, the following screen is displayed.



Scan Position Adjustment

Side registration adjustment - The separate setting items are prepared for FBS, ADF (front side) and ADF (back side) independently.

Setting for Flat Bed Scanning (FBS)

Perform adjustment so that the scan start position in the horizontal scanning direction during **FBS Scanning** stays within the reference value. Adjustment in increments of 1 item (5/600 dpi = 0.2117 mm) is possible in this setting. When a value is added in the negative (-) direction, the scan image on a PC moves to the right. When a value is added in the positive (+) direction, the scan image on a PC moves to the left.

Setting for ADF (front side)

Perform adjustment so that the scan start position in the horizontal scanning direction during ADF front side scanning stays within the reference value. Adjustment in increments of 1 item (5/600 dpi = 0.2117 mm) is possible in this setting. When a value is added in the negative (-) direction, the scan image on a PC moves to the left. When a value is added in the positive (+) direction, the scan image on a PC moves to the right.

Setting for ADF (rear side)

Perform adjustment so that the scan start position in the horizontal scanning direction during ADF rear side scanning stays within the reference value. Adjustment in increments of 1 item (5/600 dpi = 0.2117 mm) is possible in this setting. When a value is added in the negative (-) direction, the scan image on a PC moves to the left. When a value is added in the positive (+) direction, the scan image on a PC moves to the right.

Top End Position Adjustment

Perform adjustment so that the scan start position in the vertical scanning direction during **FBS** scanning stays within the reference value. If shade is scanned at the top end of a document, make adjustment in the positive direction. If deficiency occurs at the top end of a document, make adjustment in the negative direction. Adjustment in increments of 1 item (0.1408 mm) is possible in this setting. When a value is added in the negative (-) direction, the scan image on a PC moves down. When a value is added in the positive (+) direction, the scan image on a PC moves up.

Setting for ADF (front side)

Perform adjustment so that the scan start position in the vertical scanning direction during ADF front side scanning stays within the reference value. If shade is scanned at the top end of a document, make adjustment in the positive direction. If deficiency occurs at the top end of a document, make adjustment in the negative direction. Adjustment in increments of 1 item (0.0619 mm) is possible in this setting. When a value is added in the negative (-) direction, the scan image on a PC moves down. When a value is added in the positive (+) direction, the scan image on a PC moves up.

Setting for ADF (back side)

Perform adjustment so that the scan start position in the vertical scanning direction during ADF rear side scanning stays within the reference value. If shade is scanned at the top end of a document, make adjustment in the positive direction. If deficiency occurs at the top end of a document, make adjustment in the negative direction. Adjustment in increments of 1 item (0.0619 mm) is possible in this setting. When a value is added in the negative (-) direction, the scan image on a PC moves down. When a value is added in the positive (+) direction, the scan image on a PC moves up.

Back End Position Adjustment

Precaution The rear end position adjustment should be executed after the top end position adjustment is completed. In addition, scanning is stopped before the rear end is reached if amount of the specified scanning lines are scanned in the copy mode and scan mode even though the rear end position adjustment is performed.

Setting for ADF (front side)

Perform adjustment so that the rear end scan position in the vertical scanning direction during ADF front side scanning stays within the reference value. If shade at the rear end of document is scanned, perform adjustment in the negative (-) direction. If deficiency occurs at the rear end of a document, make adjustment in the negative direction.
Adjustment in increments of 1 item (0.0619 mm) is possible in this setting. However, adjustment should be performed in increments of 16 items (1 mm) as a guide line due to document running at an angle.

Setting for ADF (back side)

Perform adjustment so that the rear end scan position in the vertical scanning direction during ADF rear side scanning stays within the reference value. If shade at the rear end of document is scanned, perform adjustment in the negative (-) direction. If deficiency occurs at the rear end of a document, make adjustment in the negative direction.
Adjustment in increments of 1 item (0.0619 mm) is possible in this setting. However, adjustment should be performed in increments of 16 items (1 mm) as a guide line due to document running at an angle.

Mirror Carriage Mode

This item sets Operable/Inoperable of the mirror carriage movement.
During transportation and installation of the MFP, this setting should be changed.

How to enter the mirror carriage communication mode

When the menus of [SETUP] – [Admin Setup] – [User Install] – [Mirror carriage mode] are selected, the following screen is displayed.

USER INSTALL
Select an item to edit
Mirror Carriage Mode
Damage on the mirror carriage is prevented
In case of movement of equipment.
Do you change into mirror carriage mode?
Yes
No

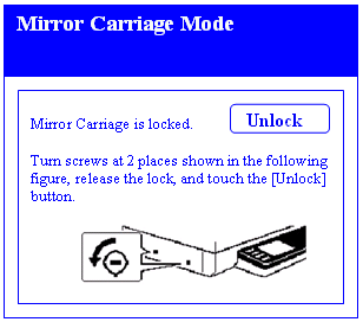
Before transportation of the MFP, select [Yes] to start movement of the mirror carriage to the specified position. When movement of the mirror carriage is complete, the following screen is displayed.

USER INSTALL
Select an item to edit
Mirror Carriage Mode enabled
Please turn two screws by the attached special tool and fix mirror. 1
Please be sure to shut down before turning off the power. 2
Close

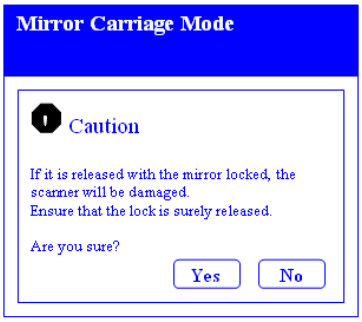
Tighten the screws at the locations as specified in the illustration, and press the [Close] button. When the mirror carriage is locked in the specified position, select the menus [SETUP] – [Shutdown] to execute the shutdown operation. Then turn OFF the power.

How to release the mirror carriage mode

When the MFP remains in the mirror carriage mode, the following standby screen is displayed.


Mirror Carriage Mode
Mirror Carriage is locked.
Unlock
Turn screws at 2 places shown in the following figure, release the lock, and touch the [Unlock] button.

Remove the screws at the locations specified in the illustration, and press the [Cancel] button. The following screen is displayed.


Mirror Carriage Mode
Caution
If it is released with the mirror locked, the scanner will be damaged.
Ensure that the lock is surely released.
Are you sure?
Yes
No

Confirm that the mirror carriage Fixing screws are removed. Then select [Yes] to release the mirror carriage mode so that the mirror carriage is returned to the normal operating condition.

2.6 Fax Maintenance

Country Code

Select the country in which the MFP is going to be installed. **(ODA)** North America
In this setting, any country code can be selected regardless of the **OKIUSER** setting.
When the screen exits the service menu after this setting is changed, the MFP reboots automatically.

Note! If any country code that is not the country of the MFP installation is selected, it can infringe on regulations and laws of the respective countries. Be careful of this point.

Tone for Echo

TX (During Transmission)

When set to **Enable**

- DIS ignore once *1: Enable
- EP tone addition during V29 send *2: Enable
- Wait time between DIS – DCS *3: 1000 ms

When set to **Disable**

- DIS ignore once *1: Disable
- EP tone addition during V29 send *2: Disable
- Wait time between DIS – DCS *3: 0 ms

This setting is effective during all communications of direct dialing and Abbr. dialing.

DIS ignore once *1:
During the overseas communication, the DIS signal can be ignored once in order to re-start the echo suppressor function that has been stopped by the CED signal. The MFP responds against the second DIS signal and sends out the DCS signal. With this setting, the MFP can send out the DCS signal under a good line condition with less echo. This setting is used in the case when the communication error such as T.1.1 occurs due to adverse effect of echo during the overseas communication.

EP tone addition during V29 send *2:

During the overseas send, reception of the training signal by the destination machine can be ensured by adding the EP tone before the sending the training signal to avoid line delay.

The EP tone of 0.5 seconds is added to the training signal of 9600/7200 bits/s + TCF/training + image information.

The EP tone of 0.5 seconds at 1700 Hz can be destroyed by the group delay of communication line so that the head portion of the training signal is damaged. In such a case, reception of the training signal by the destination machine can be ensured by adding the EP tone before sending the training signal.

Note! Some types of fax machines cannot receive the training signal 9600/7200 bits/s + TCF with the EP tone. You should be aware of this type of fax machine.

Wait time between DIS – DCS *3:
Time before the DCS signal send start after the DIS signal reception end.

RX (During Reception)

When set to **Enable**
Switching time between CED – DIS *4: 1000 ms

When set to **Disable**

Switching time between CED – DIS *4: 75 ms

Switching time between CED – DIS *4:
When the CED signal at 2100 Hz is sent out during reception of overseas communication, the echo suppression stops so that the line condition becomes inferior with much echo. As the countermeasure against the trouble, an interval is inserted after the echo suppressor is re-started (echo suppressor re-starts after muting of 0.5 seconds) before sending out the DIS signal upon \completion of the CED signal send-out by creating a muted period of time. The international telephone line uses the four-wire system in which signals are sent to the destination machine via the two-wire system –> four-wire system –> two-wire system. The international telephone switchboard is equipped with the echo prevention system (special switch circuit that prevents echo) called echo suppressor. When it detects the tone signal of 2100 Hz, operation of the echo suppressor is stopped temporarily.

Modem Transmission Speed

TX (During Transmission)

33.6 Kbps
28.8 Kbps
14.4 Kbps
9.6 Kbps
4.8 Kbps

Default = 33.6 Kbps

Sets the initial value of the modem transmission speed during fax send. This setting is effective during all communications of direct dialing and Abbr. dialing. Communication at 14.4 kbps (V.17) is performed when the menus [Admin Setup] – [User Install] – [Super G3] is set to OFF and this setting is set to “33.6 kbps”, “28.8 kbps”. When this setting is “14.4 kbps (V.17)”, “9.6 kbps (V.29)”, “4.8 kbps (V.27ter)”, communication with this setting is performed regardless of the “Super G3” setting.

RX (During reception)

33.6 Kbps
28.8 Kbps
14.4 Kbps
9.6 Kbps
4.8 Kbps

Default = 33.6 Kbps

Sets the initial value of the modem transmission speed during fax receive. Communication at 14.4 kbps (V.17) is performed when the menus [Admin Setup] – [User Install] – [Super G3] is set to OFF and this setting is set to “33.6 kbps”, “28.8 kbps”. When this setting is “14.4 kbps (V.17)”, “9.6 kbps (V.29)”, “4.8 kbps (V.27ter)”, communication with this setting is performed regardless of the “Super G3” setting.

Pulse Make Ratio **Default 40%**

Sets the make ratio of DP (10 pps) during call.

MF (Tome) Duration

ON Period **Range** 0 - 1 ms to 255 ms **Default 80ms**

Sets the ON period of MF (Tone) Duration send. When the setting value is “0”, the MFP runs at the initial value of each country. When the set value is except "0", the set value operates at 1 to 255m second.

OFF Period **Range** 0 - 1 ms to 255 ms **Default 70ms**

Sets the OFF period of MF (Tone) Duration send. When the setting value is “0”, the MFP runs at the initial value of each country. When the set value is except "0", the set value operates at 1 to 255m second.

Calling Timer **Range** 0 - 1 second to 255 seconds **Default 55 seconds**

Sets the Calling Timer. When the setting value is “0”, the MFP runs at the initial value of each country. When any value other than “0” is set, the Calling Timer can be selected in the range of 1 to 255 mm.

Attenuator **Range** 0 dB to -15 dB

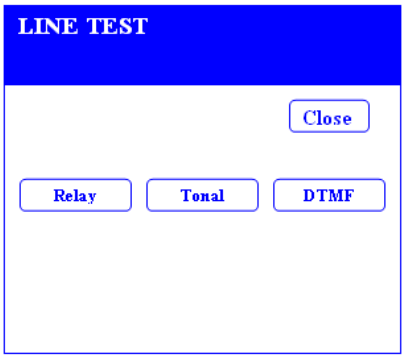
Sets the Attenuator. It can be set in units of 1 dB. When the “Country code” is set to “Japan”, it can be set in the range of 8 to 15 dB.

MF Attenuator **Range** 0 dB to -15 dB **Default 70dB**

Sets the MF Attenuator. It can be set in units of 1 dB.

Line Test

When “Line Test” is selected, the following screen is displayed. Select the desired test item to be implemented.



Relay Test

Implements the relay ON/OFF test.

Relay test procedure

Press the [Relay] button on the "Line Test” screen.
Select the desired relay that is going to receive the ON/OFF test.
When the [Close] button is pressed, the screen returns to the “Line Test” screen.
When the [Reset] key is pressed, screen returns to the top screen of the service menu.

Tonal Send Test

Tonal test procedure

Press the [Tonal] button on the "Line Test" screen.

Select a signal to test.
When the [Stop] key is pressed, signal send is interrupted.
When the [Close] button is pressed, the screen returns to the "Line test" screen.
When the [Reset] key is pressed, screen returns to the top screen of the service menu.

DTMF Test

Signals of the frequencies that are used by the push-button telephone can be selected for the send test.

DTMF test procedure

Press the [DTMF] button on the "Line Test" screen.
Select a frequency to send.
When the [Stop] key is pressed, signal send is interrupted.
When the [Close] button is pressed, the screen returns to the "Line test" screen.
When the [Reset] key is pressed, screen returns to the top screen of the service menu.

2.7 Printer Maintenance

Personality

Default setting of the PDL language that is supported by the respective destination specification can be changed. The PDL language that has been set to" Disable" by the PDL setting item will not be displayed as the choices on the following menu: [SETUP]-[Admin Setup] - [Print Setup] . At the same time, when the print data of the PDL language that has been set to "Disable" is received, a message ""Invalid data is received" is displayed and the received data is discarded.

IBM 5577	Settings: Enable /Disable	Default: Disable
IBM PPR III XL	Settings: Enable /Disable	Default: Enable
EPSON FX	Settings: Enable /Disable	Default: Enable
HP-GL/2	Settings: Enable /Disable	Default: Disable

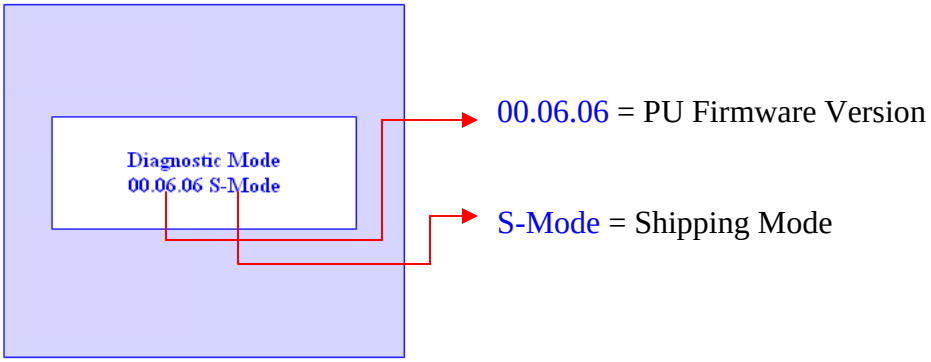
Peak Power Control

Set whether or not to support the low peak power control. When the screen exits the service menu after this setting is changed, the MFP reboots automatically.
Settings: Low / Normal **Default: Normal**

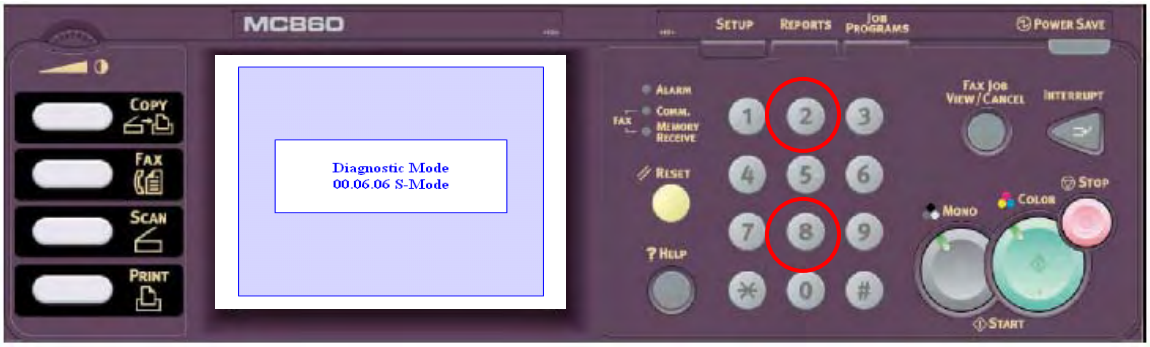
Engine Diagnostic Mode (Self-Diagnostic)

How to enter self-diagnostic mode (Level 1)

1. From the service menu, select [Printer Maintenance] and [Engine Diag. Mode] to enter the self-diagnostic mode.
2. When the screen enters the self-diagnostic mode (Level 1), the "DIAGNOSTIC MODE" is displayed.

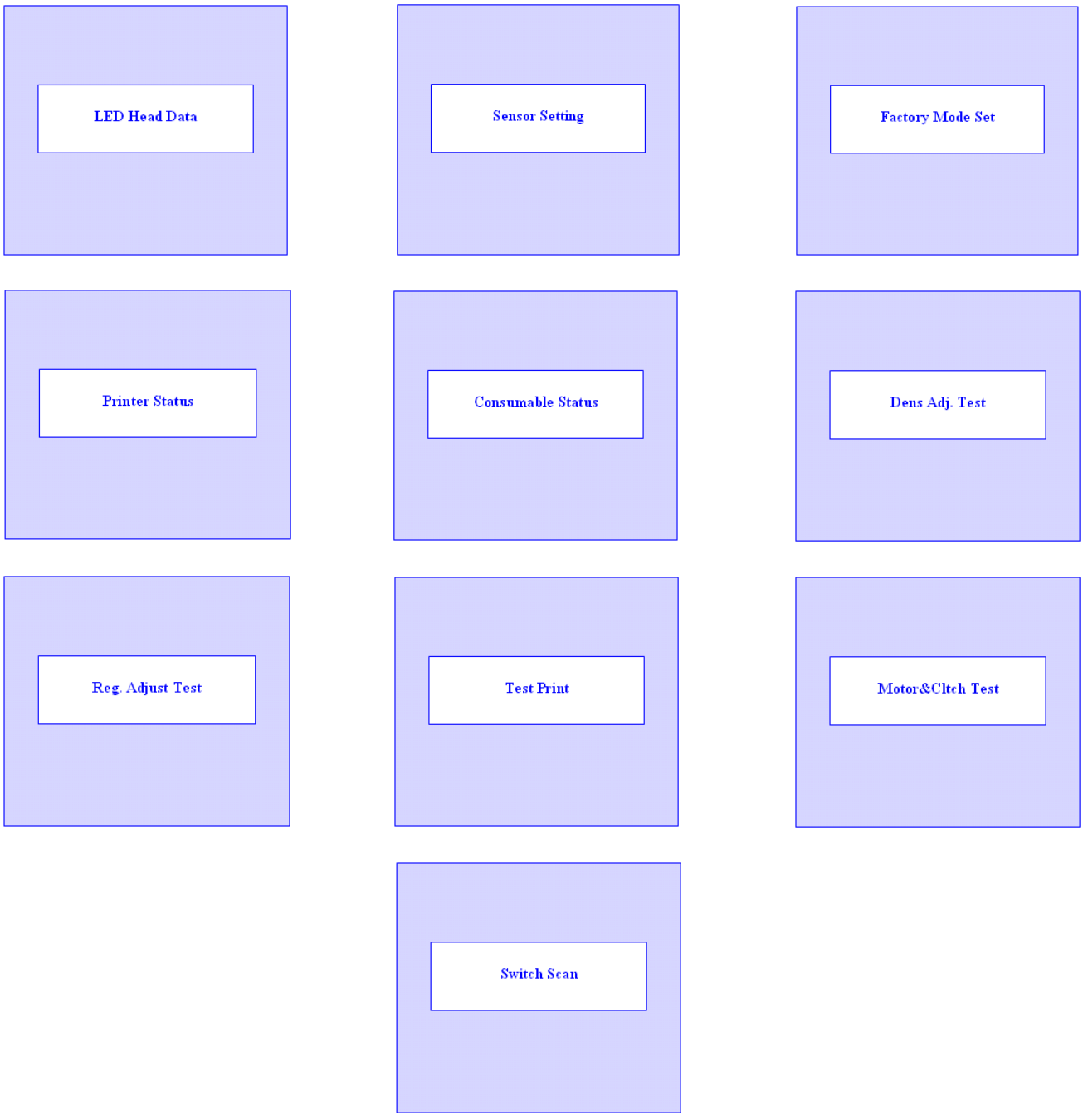


Press either **(2) key** or **(8) key** to move to the respective self-diagnostic items.
(Menu item scrolls when either **(2) key** or **(8) key** is pressed.)

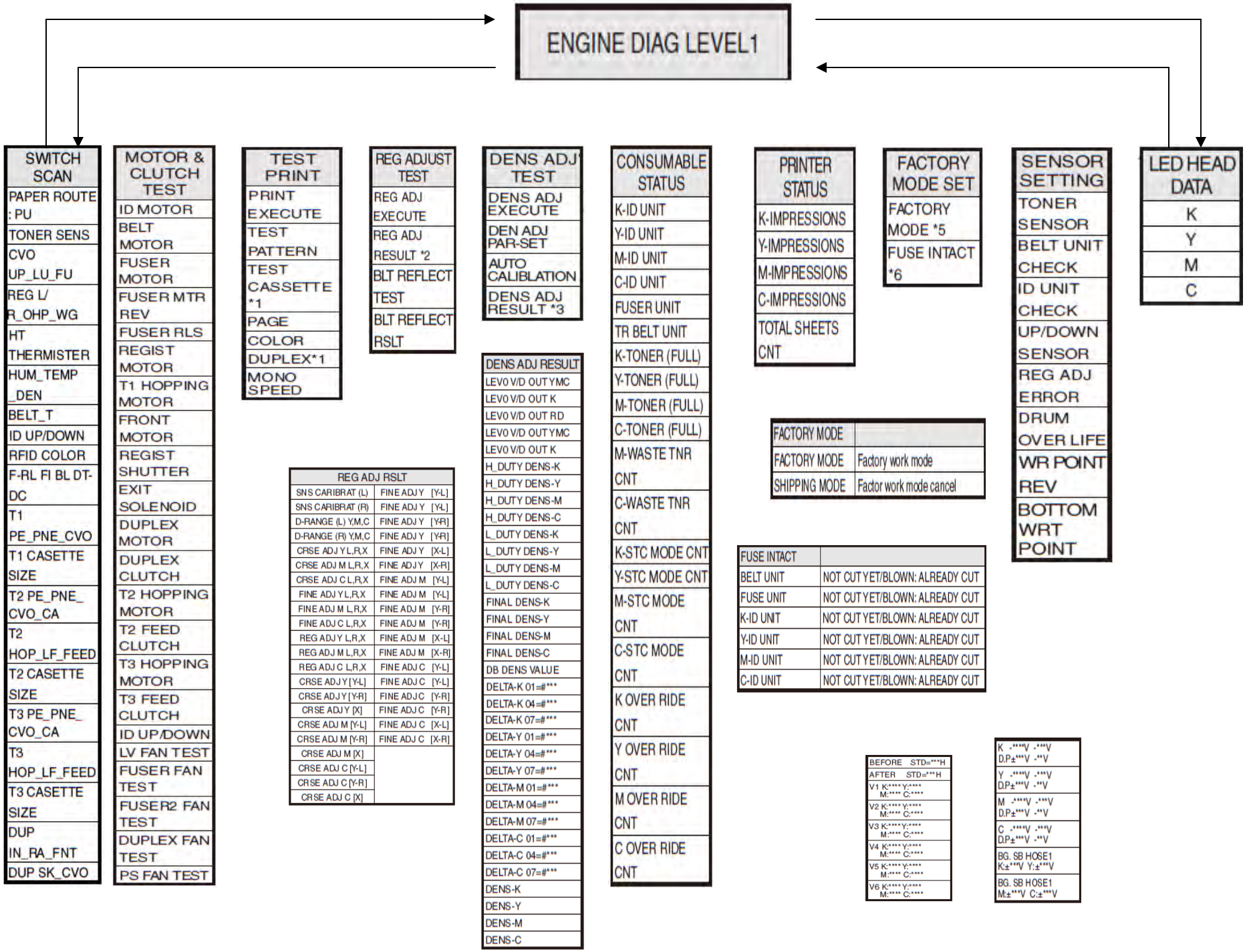


Press the **(6) key** to execute the selected test. Exit the test by pressing the **(4) key.**

Level 1 Diagnostic Screens



Item	Self-Diagnostic Menu	Adjustment Contents
Switch Scan Test **(See section 2.7.1)**	SWITCH SCAN	Input sensor and switch Check
Motor Clutch Test **(See section 2.7.2)**	MOTOR&CLTCH TEST	Motor and clutch operational test
Executing Test Print **(See section 2.7.3)**	TEST PRINT	PU internal test pattern print and printer environmental conditions
Color Registration Correction Test **(See section 2.7.4)**	REG ADJUST TEST	Color registration error correction system, normal or defective
Density Correction Test **(See section 2.7.5)**	DENS ADJ TEST	Density error correction system, normal or defective
Consumable Item Counter Display **(See section 2.7.6)**	CONSUMABLE STATUS	Consumable items, consumption status display
Consumable Item Accumulative Counter Display **(See section 2.7.6)**	PRINTER STATUS	Consumable items, accumulative consumption status display
Factory/Shipping Mode Switching **(See section 2.7.7)**	FACTORY MODE SET	Factory mode or Shipping mode switching
FUSE Status Check **(See section 2.7.7)**		Status display of respective Fuses
Engine Parameter Setting **(See section 2.7.8)**	SENSOR SETTING	Sets valid or invalid of error detection using various sensors
LED Head Serial Number Display **(Not Used)**	LED HEAD DATA	Display of LED head serial Number

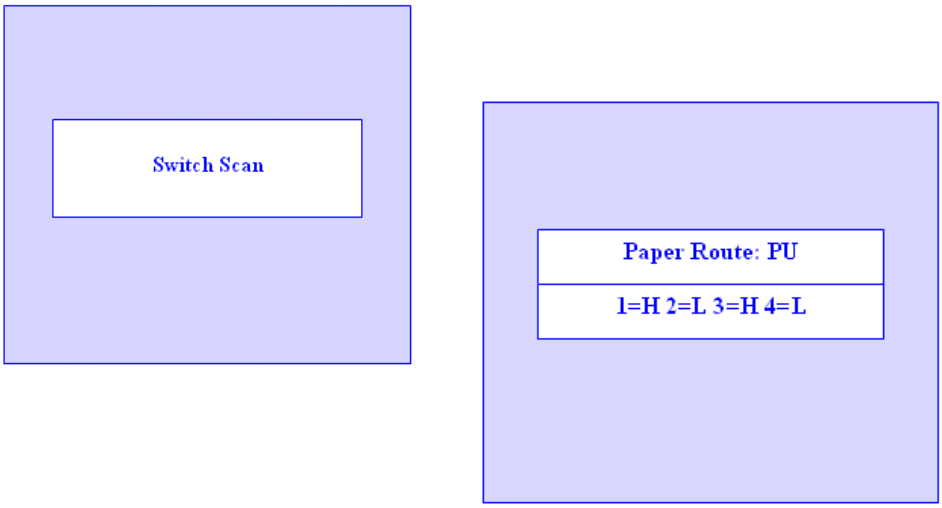

ENGINE DIAG LEVEL1
SWITCH SCAN
PAPER ROUTE : PU
TONER SENS
CVO UP_LU_FU
REG L/R_OHP_WG
HT THERMISTER
HUM_TEMP _DEN
BELT_T
ID UP/DOWN
RFID COLOR
F-RL FI BL DT-DC
T1 PE_PNE_CVO
T1 CASETTE SIZE
T2 PE_PNE_ CVO_CA
T2 HOP_LF_FEED
T2 CASETTE SIZE
T3 PE_PNE_ CVO_CA
T3 HOP_LF_FEED
T3 CASETTE SIZE
DUP IN_RA_FNT
DUP SK_CVO
MOTOR & CLUTCH TEST
ID MOTOR
BELT MOTOR
FUSER MOTOR
FUSER MTR REV
FUSER RLS
REGIST MOTOR
T1 HOPPING MOTOR
FRONT MOTOR
REGIST SHUTTER
EXIT SOLENOID
DUPLEX MOTOR
DUPLEX CLUTCH
T2 HOPPING MOTOR
T2 FEED CLUTCH
T3 HOPPING MOTOR
T3 FEED CLUTCH
ID UP/DOWN
LV FAN TEST
FUSER FAN TEST
FUSER2 FAN TEST
DUPLEX FAN TEST
PS FAN TEST
TEST PRINT
PRINT EXECUTE
TEST PATTERN
TEST CASSETTE *1
PAGE
COLOR
DUPLEX*1
MONO SPEED
REG ADJUST TEST
REG ADJ EXECUTE
REG ADJ RESULT *2
BLT REFLECT TEST
BLT REFLECT RSLT
DENS ADJ TEST
DENS ADJ EXECUTE
DEN ADJ PAR-SET
AUTO CALIBLATION
DENS ADJ RESULT *3
CONSUMABLE STATUS
K-ID UNIT
Y-ID UNIT
M-ID UNIT
C-ID UNIT
FUSER UNIT
TR BELT UNIT
K-TONER (FULL)
Y-TONER (FULL)
M-TONER (FULL)
C-TONER (FULL)
M-WASTE TNR CNT
C-WASTE TNR CNT
K-STC MODE CNT
Y-STC MODE CNT
M-STC MODE CNT
C-STC MODE CNT
K OVER RIDE CNT
Y OVER RIDE CNT
M OVER RIDE CNT
C OVER RIDE CNT
PRINTER STATUS
K-IMPRESSIONS
Y-IMPRESSIONS
M-IMPRESSIONS
C-IMPRESSIONS
TOTAL SHEETS CNT
FACTORY MODE SET
FACTORY MODE *5
FUSE INTACT *6
SENSOR SETTING
TONER SENSOR
BELT UNIT CHECK
ID UNIT CHECK
UP/DOWN SENSOR
REG ADJ ERROR
DRUM OVER LIFE
WR POINT REV
BOTTOM WRT POINT
LED HEAD DATA
K
Y
M
C
REG ADJ RSLT
SNS CARIBRAT (L) FINE ADJ Y [Y-L]
SNS CARIBRAT (R) FINE ADJ Y [Y-L]
D-RANGE (L) Y,M,C FINE ADJ Y [Y-R]
D-RANGE (R) Y,M,C FINE ADJ Y [Y-R]
CRSE ADJ Y L,R,X FINE ADJ Y [X-L]
CRSE ADJ M L,R,X FINE ADJ Y [X-R]
CRSE ADJ C L,R,X FINE ADJ M [Y-L]
FINE ADJ Y L,R,X FINE ADJ M [Y-L]
FINE ADJ M L,R,X FINE ADJ M [Y-R]
FINE ADJ C L,R,X FINE ADJ M [Y-R]
REG ADJ Y L,R,X FINE ADJ M [X-L]
REG ADJ M L,R,X FINE ADJ M [X-R]
REG ADJ C L,R,X FINE ADJ C [Y-L]
CRSE ADJ Y [Y-L] FINE ADJ C [Y-L]
CRSE ADJ Y [Y-R] FINE ADJ C [Y-R]
CRSE ADJ Y [X] FINE ADJ C [Y-R]
CRSE ADJ M [Y-L] FINE ADJ C [X-L]
CRSE ADJ M [Y-R] FINE ADJ C [X-R]
CRSE ADJ M [X]
CRSE ADJ C [Y-L]
CRSE ADJ C [Y-R]
CRSE ADJ C [X]
DENS ADJ RESULT
LEV0 V/D OUT YMC
LEV0 V/D OUT K
LEV0 V/D OUT RD
LEV0 V/D OUT YMC
LEV0 V/D OUT K
H_DUTY DENS-K
H_DUTY DENS-Y
H_DUTY DENS-M
H_DUTY DENS-C
L_DUTY DENS-K
L_DUTY DENS-Y
L_DUTY DENS-M
L_DUTY DENS-C
FINAL DENS-K
FINAL DENS-Y
FINAL DENS-M
FINAL DENS-C
DB DENS VALUE
DELTA-K 01=#***
DELTA-K 04=#***
DELTA-K 07=#***
DELTA-Y 01=#***
DELTA-Y 04=#***
DELTA-Y 07=#***
DELTA-M 01=#***
DELTA-M 04=#***
DELTA-M 07=#***
DELTA-C 01=#***
DELTA-C 04=#***
DELTA-C 07=#***
DENS-K
DENS-Y
DENS-M
DENS-C
FACTORY MODE
FACTORY MODE Factory work mode
SHIPPING MODE Factor work mode cancel
FUSE INTACT
BELT UNIT NOT CUT YET/BLOWN: ALREADY CUT
FUSE UNIT NOT CUT YET/BLOWN: ALREADY CUT
K-ID UNIT NOT CUT YET/BLOWN: ALREADY CUT
Y-ID UNIT NOT CUT YET/BLOWN: ALREADY CUT
M-ID UNIT NOT CUT YET/BLOWN: ALREADY CUT
C-ID UNIT NOT CUT YET/BLOWN: ALREADY CUT
BEFORE STD=***H
AFTER STD=***H
V1 K:**** Y:**** M:**** C:****
V2 K:**** Y:**** M:**** C:****
V3 K:**** Y:**** M:**** C:****
V4 K:**** Y:**** M:**** C:****
V5 K:**** Y:**** M:**** C:****
V6 K:**** Y:**** M:**** C:****
K -.***V -.***V D.P±***V -.**V
Y -.***V -.***V D.P±***V -.**V
M -.***V -.***V D.P±***V -.**V
C -.***V -.***V D.P±***V -.**V
BG. SB HOSE1 K:±***V Y:±***V
BG. SB HOSE1 M:±***V C:±***V

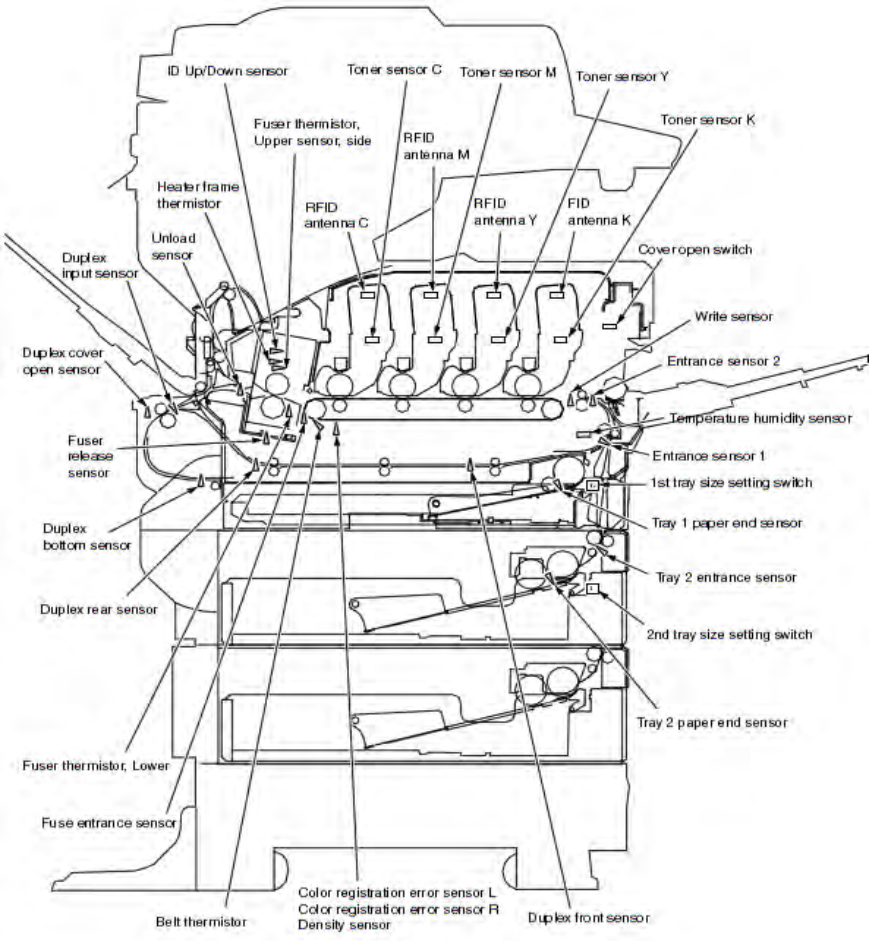
2.7.1 Switch Scan Test

This self-diagnostic menu is used to check the input sensors and switches of the print engine.

1. Enter the self-diagnostic mode **(Level 1)** and press the **(2) key** or **(8) key** until **"SWITCH SCAN"** is displayed in the top of the screen. Press the **(6) key** to execute.

(The **(2) key** increments the test item and **(8) key** decrements the test item.)





Switch Scan Test

Display Detail on Printer LCD	Location 1		Location 2		Location 3		Location 4	
	Sensor Tested	Display Condition	Sensor Tested	Display Condition	Sensor Tested	Display Condition	Sensor Tested	Display Condition
Paper Route: PU	Entrance Sensor 1	H - Absent L – Present	Entrance Sensor 2	H - Absent L – Present	Write Sensor	H - Absent L – Present	Unload (Exit) Sensor	H - Absent L – Present
Toner Sensor	Toner K Sensor	H - Off L - On	Toner Y Sensor	H - Off L - On	Toner M Sensor	H - Off L - On	Toner C Sensor	H - Off L – On
CVO UP_LU_FU	Cover Upper	H - Closed L – Open						
REG L/R_OHP_WG	Color registration error sensor L	AD value: ***H	Color registration error sensor R	AD value: ***H				
HT THERMISTER	Fuser thermistor, Upper sensor	AD value: ***H	Fuser thermistor, Lower	AD value: ***H	Fuser thermistor, Upper sensor, side	AD value: ***H	Heater frame thermistor	AD value: ***H
HUM_TEMP_DEN	Humidity sensor	AD value: ***H	Temperature sensor	AD value: ***H	Density sensor (K)	AD value: ***H	Density sensor (YMC)	AD value: ***H
BELT_T	Belt thermistor	AD value: ***H						
ID UP/DOWN							Up Down sensor	H: Up L: Down
RFID COLOR*1	RFID antenna K	UID: ***H	RFID antenna Y	UID: ***H	RFID antenna M	UID: ***H	RFID antenna C	UID: ***H
F-RL FI BL DT-DC	Fuser release sensor	H: ON L: OFF	Fuse entrance sensor	H: ON L: OFF				
T1 PE_PNE_CVO	Tray 1 paper end sensor	H: absent L: present						
T1 CASETTE SIZE*2	Size setting switch 1	Port level H, L	Size setting switch 2	Port level H, L	Size setting switch 3	Port level H, L	Size setting switch 4	Port level H, L
T2 PE_PNE_CVO_CA	Tray 2 paper end sensor	H: absent L: present						
T2 HOP_LF_FED					Tray 2 entrance sensor	H: absent L: present		
T2 CASETTE SIZE*2	Size setting switch 1	Port level H, L	Size setting switch 2	Port level H, L	Size setting switch 3	Port level H, L	Size setting switch 4	Port level H, L
T3 PE_PNE_CVO_CA	Tray 3 paper end sensor	H: absent L: present						
T3 HOP_LF_FED					Tray 3 entrance sensor	H: absent L: present		
T3 CASETTE SIZE*2	Size setting switch 1	Port level H, L	Size setting switch 2	Port level H, L	Size setting switch 3	Port level H, L	Size setting switch 4	Port level H, L
DUP IN_RA_FNT	Duplex input sensor	H: absent L: present	Duplex rear sensor	H: absent L: present	Duplex front sensor	H: absent L: present		
DUP SK_CVO	Duplex bottom sensor	H: absent L: present	Duplex cover sensor	H: Close L: Open				

2.7.2 Motor & Clutch Test

This self-diagnostic menu is used to test the motors and clutches of the print engine.

1. Enter the self-diagnostic mode **(Level 1)** and press the **(2) key** or **(8)** key until **[MOTOR & CLUTCH TEST]** is displayed in the top of the screen.
Press the **(6) key** to execute.
The **(2) key** increments the test item and **(8) key** decrements the test item.

2. Press the **(2) key** or the **(8) key** until the item that corresponds to the unit which is going to be tested is displayed in the bottom of the screen.

3. When the **(6) key** is pressed, the test is started. The unit name starts blinking and the corresponding unit runs for 10 seconds.

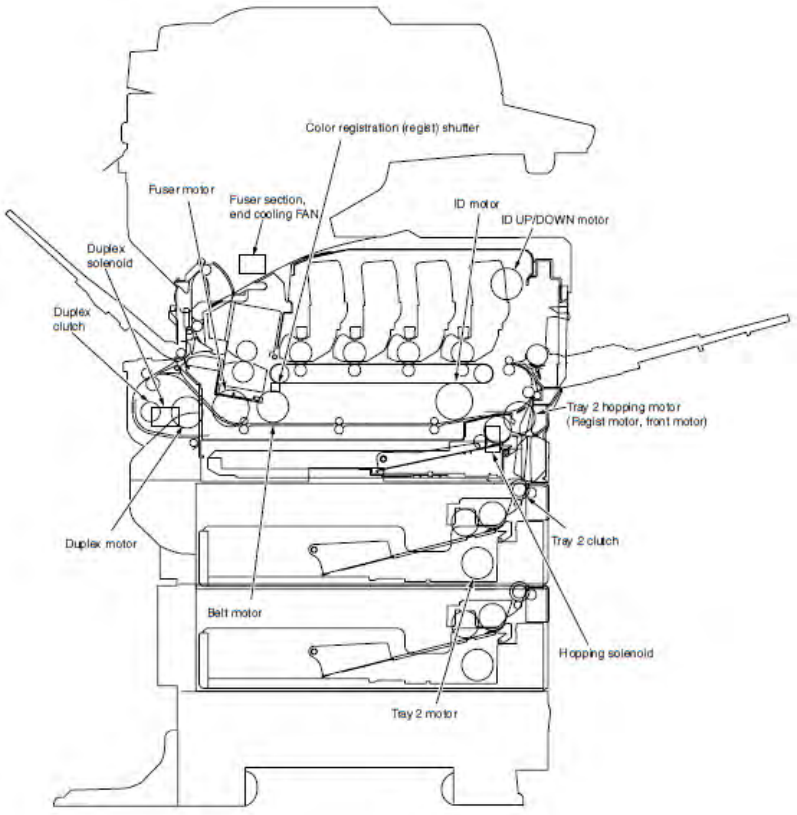
Note! After running for 10 seconds, screen returns to the item 2 state. When the corresponding switch is pressed, the test program restarts.

• The clutch solenoid repeats ON and OFF during the normal print job. (For the model in which the independent drive is not possible due to mechanism structure, the motor will run at the same time.) *"ID UP/DOWN" continues running until the (#) key is pressed.
• When the desired motor is selected and the [ENTER] key is pressed for an extended time (2 seconds), it keeps running.

4. When the (#) key is pressed, the corresponding unit stops running.
(The corresponding unit is kept displayed on the screen.)

5. Repeat items 2 to 4 as required.

6. When the **(4) key** is pressed, the screen exits the test.
(Screen returns to the item 1 condition.)



Unit Name Display	Drive Restriction Conditions
ID MOTOR	Drives when all of the IDs (K/Y/M/C) are removed.
BELT MOTOR	Drives when all of the IDs (K/Y/M/C) are removed.
FUSER MOTOR	
FUSER MTR REV	
FUSER_RLS	
REGIST MOTOR	
T1 HOPPING MOTOR	
FRONT MOTOR	
REGIST SHUTTER	
EXIT SOLENOID	
DUPLEX MOTOR	
DUPLEX CLUTCH	
T2 HOPPING MOTOR	If option installed
T2 FEED CLUTCH	If option installed
T3 HOPPING MOTOR	If option installed
T3 FEED CLUTCH	
ID UP/DOWN	TOP/FRONT covers, closed condition
LV FAN TEST	
FUSER FAN TEST	
FUSER2 FAN TEST	
DUPLEX FAN TEST	
PS FAN TEST	

2.7.3 Test Print

This self-diagnostic menu is used to print the test pattern contained in the PU. Other test patterns are contained in the controller.

1. Enter the self-diagnostic mode **(Level 1)** and press the **(2) key** or **(8) key** until [TEST PRINT] is displayed in the top of the screen.

Press the **(6) key** to execute.

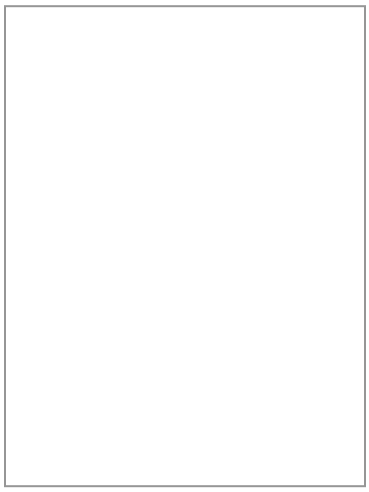
The **(2) key** increments the test item and **(8) key** decrements the test item.

2. The setting items that are applicable to the test print only are displayed in the lower column of display window. Press the **(2) key** or the **(8) key** until the corresponding item is displayed. (When the setting value for each item is not required **[Default setting],** advance to item 2.)

3. Keep pressing the **(2) key** or the **(8) key**, and press the **(6) key** at the item that is set in item 2. The setup item is displayed in the upper column, and the setting value is displayed in the lower column of the display window.
(The setting value that is displayed last is applied.)
Pressing the **(4) key** determines the setting value, and the screen returns to item 2.)
Repeat item 3 as required.

Display	Setup Value	Function
PRINT EXECUTE		Pressing the (4) key starts printing/Pressing the (#) key ends printing (in page unit).
TEST PATTERN	0	0 = White paper print 1 to 7 Refer to next page. (Pattern print) 8 to 15 = White paper print
TEST CASSETTE	TRAY1	Select the paper feed source. If TRAY2 is not installed, TRAY2 is not displayed.
	TRAY2	
	MPT Tray	
PAGE	0000	Setting the number of test prints.
COLOR	ON	Selecting color or monochrome print. ON is specified, ON/OFF setting for each color appears.
	OFF	
DUPLEX	2 PAGES STACK	Duplex print is executed with two sheets stack.
	OFF	Duplex print OFF select
	1PAGES STACK	Duplex print is executed with single sheet stack.
MONO SPEED	LOW	Selecting monochrome print speed. LOW: 30ppm HIGH: 34ppm(A4),33ppm(Letter)
	HIGH	

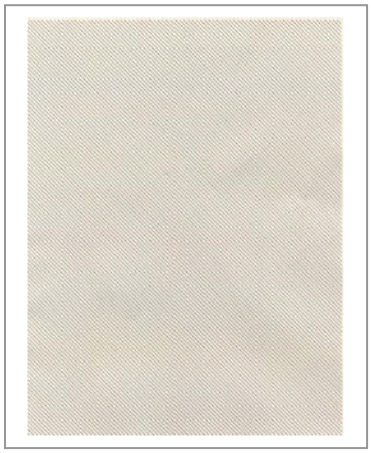
Print Patterns



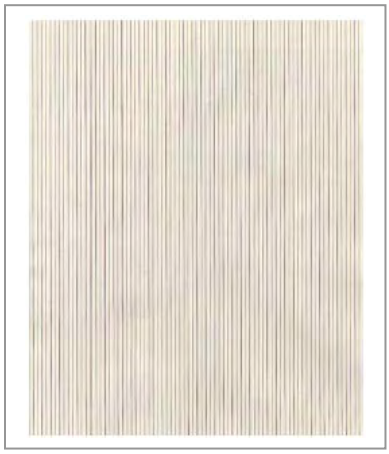
Pattern 1

Pattern 2

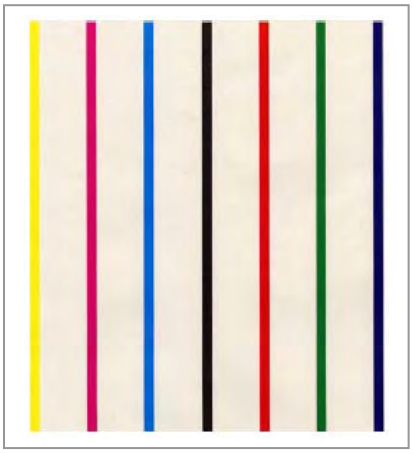
Pattern 3



Pattern 4



Pattern 5



Pattern 6

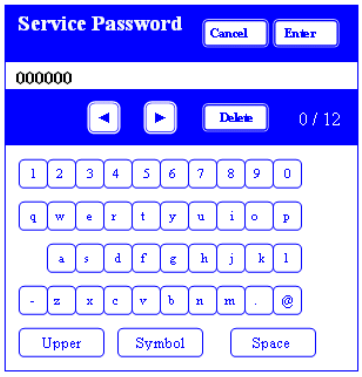
Pattern 7

Note! If the solid print data (Pattern 7) that is contained in the local print function is used for test print with 100% setting of each color, it causes offset. To prevent offset, select the print setting of each color so that the number of colors to be printed at the same time should be limited to 2 colors or less.

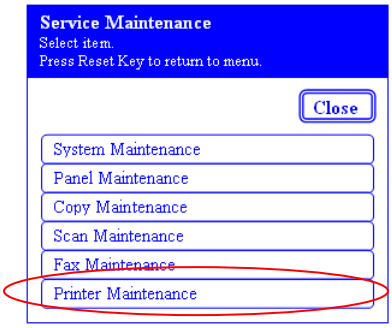
Generating a 100% Fill Test Page

1. Press the **"Setup"** key and the numeric keys in the order of **[#] [1] [9] [3] [7]** to enter service mode.

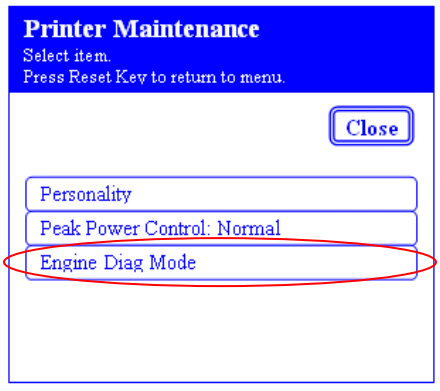
2. The password entry screen is displayed. Enter the password that is required to enter the service menu. (000000) (Six zeros) and "Enter".

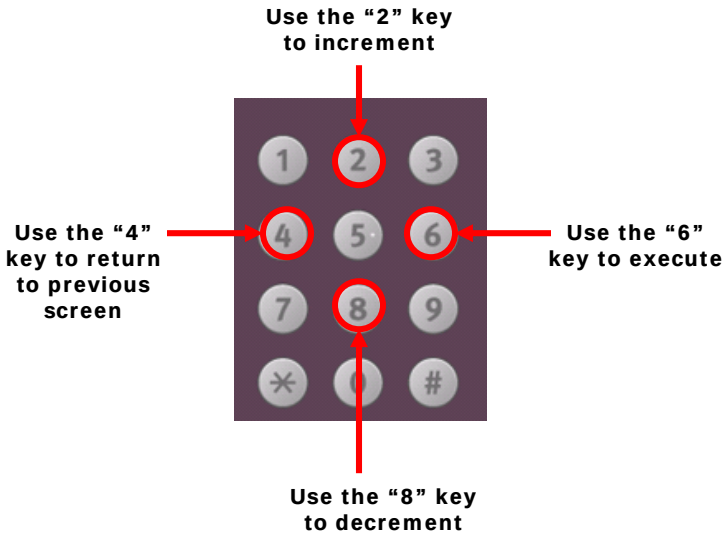


3. Select "Printer Maintenance"

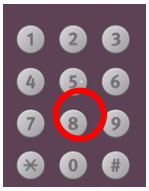


4. Select "Engine Diag Mode".





5. Select the **"8"** key until "Test Print" appears



Test Print

6. Select the **"6"** key.
Then the **"8"** Key.

Test Print
Mono Speed

Select **"6"** to execute then **"8"** to change.
Once changed, select **"4"** to return.

7. Select the **"8"** key,

Test Print
Duplex

8. Select the **"6"** key.

Duplex
Off

Select **"8"** to change.
Once changed, select **"4"** to return

9. Select the **"8"** key.

Test Print
Color

10. Select the **"6"** key.

Color On

11. Select the **"6"** key.

Select the **"8"** key to move to each color. Select * or # to turn color on/off. Once changed, select **"4"**, **"4"** to return.

Y:Off M:On
C:Off K:Off

In this example 100% Magenta will be generated

12. Select the **"8"** key.

Test Print
Page

13. Select the **"6"** key.
Then the " " Key.

Pages
0001

Select * or # to select . Once changed, select **"4"**, **"4"** to return.

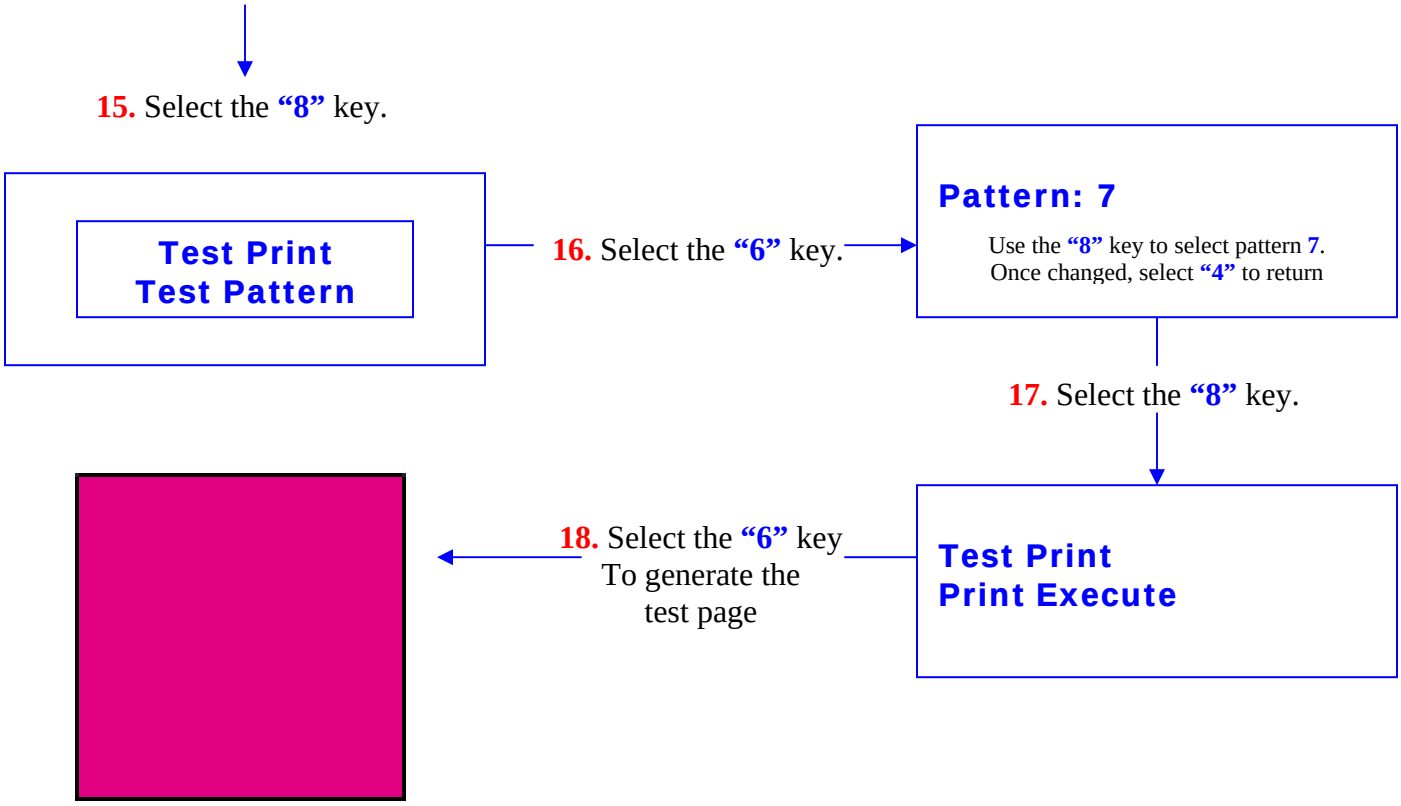
14. Select the **"8"** key.

Test Print
Cassette

14. Select the **"6"** key.

Cassette
Tray 1

Select **"8"** to change.
Once changed, select **"4"** to return



Once the test print has printed, to exit select **"4"**, **"4"**, **"4"**. At the printer maintenance screen select "close", close".

Note: The values entered in the various Test Print screens will remain after you exit. To run a different test you will need to enter the new values if a different test is required.

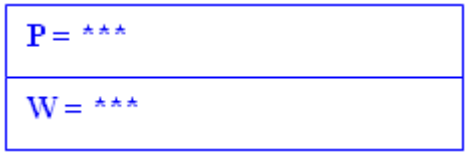
Generating a 25% Fill Test Page

Follow the same procedure as above. In step 16 select Test Pattern 2.

Monitoring Printer Environmental Conditions

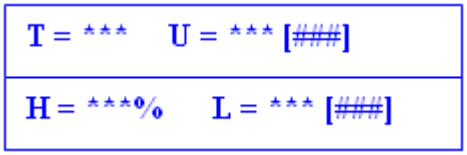
The following printer environmental conditions can be monitored during generation of test prints.

The following messages are displayed during test print.



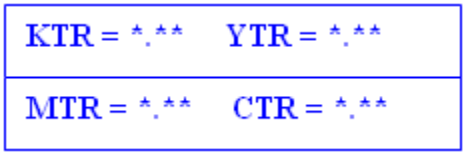
P * =** Number of test prints (unit: sheet)
W* =** Print wait time (unit: sheet)

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



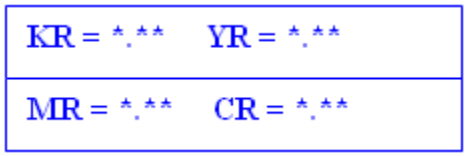
T =* =** Environment temperature measurement value [unit: °C]
U =* =** Upper heater temperature measurement value. [unit: °C] [###] = target temperature [unit: °C]
H =*% =** Environment humidity measurement value [unit: %]
L = * =** Lower thermistor measurement value. [unit: °C] **[###]** = Lower thermistor AD value [unit: HEX]

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



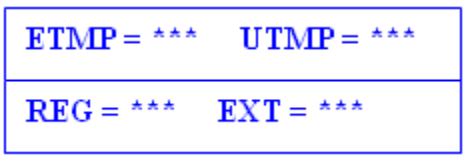
KTR, YTR, MTR and CTR are the transfer voltage setting values for each color. (measured in KV)

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



KR, YR, MR, CR are transfer roller resistance values for each color. [measured in µA]

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



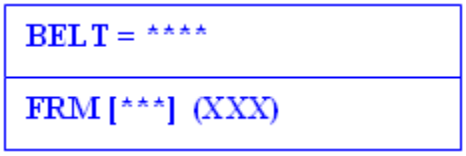
ETMP: Hopping motor standard speed correction parameter (Environment temperature) [unit: DEC]

UTMP: Fuser motor standard speed correction parameter (Fuser target temperature) [unit: DEC]
REG: Hopping motor standard speed timer value (I/O setting value) [unit: HEX]
EXT: Fuser motor standard speed timer value (I/O setting value) [unit: HEX]

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)

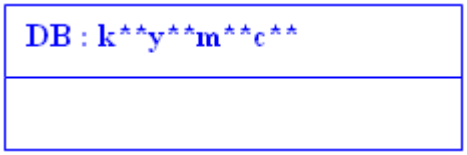
KID, YID, MID and CID are the standard speed timer values for each ID motor (I/O setting value) [unit: HEX]

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



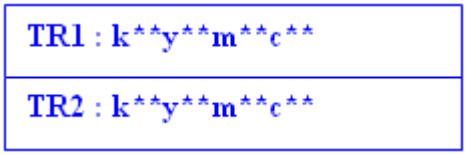
BELT: Belt motor standard speed timer value (I/O setting value) [unit: HEX]
FRM: [***] = Frame thermistor read-out AD value [unit: HEX] (xxx) = Frame temperature [unit: °C]

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



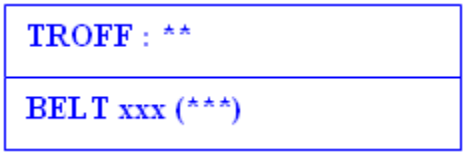
DB: Develop voltage setup table ID number [unit: HEX]

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



TR1: Transfer voltage parameter VTR1 table ID number [unit: HEX]
TR2: Transfer voltage parameter VTR2 table ID number [unit: HEX]

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)



The message is displayed but does not function.

Pressing the **(2) key** switches the display. When the **(#)** key is pressed, the screen exits the test. (Screen returns to the item 1 condition.)

2.7.4 Color Registration Error Correction Test

This self-diagnostic menu is used for adjustment and to investigate cause of the color registration error of the MFP.

1. Enter the self-diagnostic mode (Level 1) and press the **(2) key** or **(8) key** until **[TEST PRINT]** is displayed in the top of the screen.

2. When the **(6) key** is pressed, the following message is displayed.
Press the **(2) key** or **(8) key** until the desired item is displayed.

REG ADJUST TEST
REG ADJ EXECUTE

3. When the **(6) key** is pressed, test of the item that is being displayed on the panel is implemented.

<< When **REG ADJ EXECUTE** is executed >>

- The color registration correction test is implemented. (The **[ON LINE]** lamp blinks.)
- When the test is complete, the test result (OK or error name) is displayed in the upper column of the display window and ****** RESULT** is displayed in the lower column of the display window.

When the **(2) key** is pressed, test results are incremented and displayed in order.
When the **(8) key** is pressed, test results are decremented and displayed in order.
When the **(4) key** is pressed, screen returns to the item 2 status.

- When the **(#) key** is pressed while the test in progress, the test is interrupted (the **[ON LINE]** lamp lights) and screen returns to the item 2 status.

<< **REG ADJ RESULT** is executed >>

OK
REG ADJ RESULT

The key operations are the same as those above.

<< When **BLT REFLECT TEST** is executed >>

- The color registration error correction belt reflection test is implemented. (The **[ON LINE]** lamp blinks.)
- When the test is complete, the test result (OK or error name) is displayed in the upper column of the display window and ****** RESULT** is displayed in the lower column of the display window.

The key operations are the same as those above.

<< When **BLT REFLECT RSLT** is executed >>

The key operations when **BLT REFLECT RSLT** is executed The key operations are the same as those above.

When the **(4) key** is pressed, the screen exits the test. (Screen returns to the item 1 condition.)
Color registration correction test items

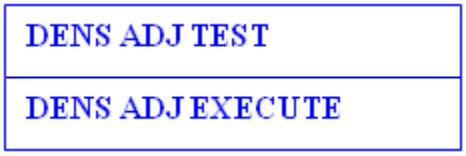
Display	Details
REG ADJ EXECUTE	Execution of color registration error correction
REG ADJ RESULT	Referring to the result of color registration error correction
BLT REFLECT TEST	Execution of color registration error correction belt reflectance Good/Bad Judgment
BLT REFLECT RSLT	Referring to the result of color registration error correction belt reflectance Good/Bad judgment

2.7.5 Density Error Correction Test

This self-diagnostic menu is used to test the density error correction function of the MFP.

1. Enter the self-diagnostic mode **(Level 1)** and press the **(2) key** or **(8) key** until **[TEST PRINT]** is displayed in the top of the screen.

2. When the **(6) key** is pressed, the following message is displayed.
Press the **(2) key** or **(8) key** until the desired item is displayed.



3. When the **(6) key** is pressed, test of the item that is being displayed on the panel is implemented.

<< When **DENS ADJ EXECUTE** is executed >>

- The Density error correction test is executed. (The **[ON LINE]** lamp blinks.)
- When the test is complete, the test result (OK or error name) is displayed in the upper column of the display window and ****** RESULT** is displayed in the lower column of the display window.

When the **(2) key** is pressed, test results are incremented and displayed in order.
When the **(8) key** is pressed, test results are decremented and displayed in order.
When the **(4) key** is pressed, screen returns to the item 2 status.

- When the **(#) key** is pressed while the test in progress, the test is interrupted (the **[ON LINE]** lamp lights) and screen returns to the item 2 status.
-

<< When **DENS ADJ RESULT** is executed >>

The key operations are the same as those above.

<< When **DENS ADJ PAR-SET** is executed >>

The message is displayed but does not function.

<< **AUTO CALIBRATION** is executed >>

- Automatic setting of the density sensor sensitivity correction value is executed. (The **[ON LINE]** lamp blinks.)
- When the test is complete, the test result (OK or error name) is displayed in the upper column of the display window and ****** RESULT** is displayed in the lower column of the display window.

When the **(4) key** is pressed, screen returns to the item 2 status.
When the **(#) key** is pressed while the test in progress, the test is interrupted (the [ON LINE] lamp lights) and screen returns to the item2 status.
When the **(4) key** is pressed, the screen exits the test. (Screen returns to the item 1 condition.)

Display	Details
DENS ADJ EXECUTE	Execution of density correction
DENS ADJ PAR-SET	The message is displayed but does not function.
DENS ADJ RESULT	Referring to the result of density correction
AUTO CALIBRATION	Automatic setting of density sensor sensitivity correction value

2.7.6 Consumable Item Counter Display

This self-diagnostic menu is used to display the consumption status of the consumable items.

1. Enter the self-diagnostic mode and press the **(2) key** or **(8) key** until **[CONSUMABLE STATUS]** is displayed on the screen.

Press the **(6) key** to execute.

The **(2) key** increments the test item and **(8) key** decrements the test item.

2. When the **(2) key** or **(8) key** is pressed, consumption status of the consumable items are displayed in order. Pressing the (*) key or the (#) key is invalid.

When the **(4) key** is pressed, the screen exits the test. (Screen returns to the item 1 condition.)

Display	Unit of Measure	Details
K-ID UNIT	Images	Number of rotations up to the present time since the new ID UNIT for each color has been installed is displayed after the data is converted to the equivalent value of A4, 3Page/ Job.
Y-ID UNIT	Images	
M-ID UNIT	Images	
C-ID UNIT	Images	
FUSER UNIT	Prints	Number of sheets up to the present time since the new FUSER unit has been installed.
TR BELT UNIT	Images	Number of sheets up to the present time since the new Belt UNIT has been installed.
K-TONER (FULL)	Percentage	Amount of consumption of the respective color toners are displayed.
Y-TONER (FULL)	Percentage	
M-TONER (FULL)	Percentage	
C-TONER (FULL)	Percentage	
M-WASTE TNR CNT	Times	Amount of waste toner is displayed. * When it reaches 32 times, the Waste toner FULL is issued.
C-WASTE TNR CNT	Times	
K-STC MODE CNT	Times	Number of printed character dot counts for the respective toners are displayed. (Accumulative value since the MFP has started running.)
Y-STC MODE CNT	Times	
M-STC MODE CNT	Times	
C-STC MODE CNT	Times	
K OVER RIDE CNT	Times	Accumulative number of times of the toner cartridges for respective colors are displayed.
K OVER RIDE CNT	Times	
K OVER RIDE CNT	Times	
K OVER RIDE CNT	Times	

Printed Sheets Counter Display

This self-diagnostic menu is used to display the number of printed sheets status of the MFP.

1. Enter the self-diagnostic mode and press the **(2) key** or **(8) key** until **[PRINTER STATUS]** is displayed on the screen.

Press the **(6) key** to execute.

The **(2) key** increments the test item and **(8) key** decrements the test item.

2. When the **(2) key** or **(8) key** is pressed, number status of the printed sheets are displayed in order. Pressing the (*) key or the (#) key is invalid.

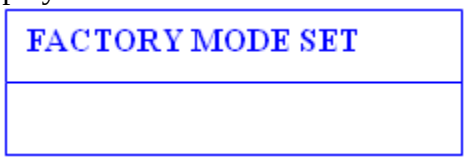
When the **(4) key** is pressed, the screen exits the test. (Screen returns to the item 1 condition.)

Display	Unit of Measure	Details
K – IMPRESSIONS	Images	Number of printed sheets for each color are displayed.
Y – IMPRESSIONS	Images	
M – IMPRESSIONS	Images	
C – IMPRESSIONS	Images	
TOTAL SHEET CNT	Prints	Total number of printed sheets are displayed.

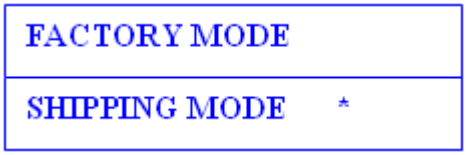
2.7.7 Factory/Shipping Mode Switching

This self-diagnostic menu is used to switch the PU PCB from the Factor mode to the Shipping mode.

1. Enter the self-diagnostic mode **(Level 1)** and press the **(2) key** or **(8) key** until the following message is displayed.



2. When the **(6) key** is pressed, the following message is displayed.



Press the **(2) key** or **(8) key** until the desired item (refer to the table below) is displayed.

3. While desired item to set is being displayed, press the **(6) key** to enable operator to select the setting value.

4. While desired item to set is being displayed, press the **(6) key** for an extended time (3 seconds) to register the display value in **EEPROM**. Screen returns to the item 2 condition.
When the **(4) key** is pressed, the screen exits the test. (Screen returns to the item 1 condition.)

Upper Display	Lower Display	Function
FACTORY MODE	FACTORY MODE	Sets up the Factory work mode. This is a production mode. ***Note!*** The unit should always be set for Shipping mode or erratic operation may result.
	SHIPPING MODE	Sets up the Shipping mode for normal operation.
FUSE INTACT ***Note!*** Indicates whether fuse is INTACT or BLOWN.	BELT UNIT ******	Checks the FUSE status of the transfer belt unit.
	FUSE UNIT ******	Checks the FUSE status of the fuser.
	K-ID UNIT ******	Checks the FUSE status of the K-ID unit.
	Y-ID UNIT ******	Checks the FUSE status of the Y-ID unit.
	M-ID UNIT ******	Checks the FUSE status of the M-ID unit.
	C-ID UNIT ******	Checks the FUSE status of the C-ID unit.

2.7.8 Engine Parameter Setting

This self-diagnostic menu is used to set Enable or Disable of error detections using various sensors.

This menu enables service engineer to **Disable** or **Enable** the error detection **temporarily**. When use of this menu is completed, **be sure to return the setting values to the default**.

1. Enter the self-diagnostic mode **(Level 1)** and press the **(2) key** or **(8) key** until the following message is displayed.

2. When the (6) key is pressed, the following message is displayed.
Press the (2) key or (8) key until the desired item (refer to the table below) is displayed.

3. When the (6) key is pressed, the setting values that are shown in the lower column of the display window become selectable.

Pressing the (2) key increments the setting value. Pressing the (8) key decrements the setting value.

4. While the desired item to set is being displayed, press the (6) key for an extended time (3 seconds) to register the displayed value in EEPROM. Screen returns to the item 2 condition.

Press the (4) key (excluding the condition of item 4) to exit the menu. (Screen returns to the item 1 condition.)

Display	Setting	Operation	Function
TONER SENSOR	ENABLE	To detect	Sets Enable/Disable of the toner sensor operation
	DISABLE	Not to detect	
BELT UNIT CHECK__ENABLE	ENABLE	To check	Sets Enable/Disable of the belt installation check job.
	DISABLE	Not to check	
ID UNIT CHECK	ENABLE	To check	Sets Enable/Disable of the ID installation check job.
	DISABLE	Not to check	
UP/DOWN SENSOR	ENABLE	To detect	Sets Enable/Disable of the ID UP/DOWN sensor operation
	DISABLE	Not to detect	
REG ADJUST ERROR	ENABLE	To stop	Sets Enable/Disable of the error stop caused by the color registration error detected value.
	DISABLE	Not to stop	
DRUM OVER LIFE	Stop	To prolong life	To prolong or not to prolong the drum life when it reaches the lifetime.
	Continuance	Not to prolong life	

LED Head Serial Number Display

Not used for servicing the MFP at this time.

Fuse Check Method

Fuse Name		Error Description	Insert Point	Resistance
PU PCB (PVM PCB)	F1	Hopping error ID up/down motor	Paper feed motor, ID up/down motor 24V	1 Ω or less
	F2	Power supply FAN error Hopping error	Power supply FAN, paper feed solenoid 24V	
	F3	Duplex FAN error 2nd hopping error	Duplex, 2nd 24V	
	F4	Cover open	Belt motor, high voltage PCB 24V	
	F5	Power down	PU PCB 5V	
High voltage PCB	IP901	Cover open	High voltage 24V	
CU control PCB (TB2 PCB)	F504 F506	Service call 131 to 134 error	LED HEAD 5V	
	F505	F505 service call 131 to 134 error	LED HEAD 3.3V	
	F501	HDD error	HDD 5V	
	F503	CENTRONIX interface error	CENTRONIX interface error 5V	
	F502	CENTRONIX interface error	CENTRONIX interface error 3. 3V	
	F507	Cannot move to standby screen (OKI logo remains appearing)	PCI 5V	
MFP Control PCB (MZA PCB)	F1	SIP F/W missing	MFP PCB 5V	
	F2, F3	Operator Panel does not light.	Scanner unit 24V	
	F4	Operator Panel does not light.	Scanner unit 5V	

2.8 Initialization Functions

Items that can be initialized by the Administrator
The following table shows the setup items that can be initialized by administrator.

The gray colored items indicate that the data is stored in the CU side.
The white items indicate that the data is stored in the scanner unit side.

The items with the characters **"CL"** indicate that the registered **data will be deleted** when this function is executed.

The items with the characters **"FR"** indicate that the data will be **returned to the default setting** when this function is executed.

	Setup item	Administrator setup											
		Network default setting	HDD initialization (All area formatting)	HDD formatting (Common partition)	HDD formatting (PCL partition)	HDD formatting (PS partition)	HDD data complete erase	FLASH initialization	Language initialization	Setup value initialization	Complete erasure of individual personal information	Group counter – Reset *1	Job log deletion
Registration data	E-mail address registration data										CL		
	Access control information registration data *4						CL				CL		
	Abbrev. dial registration data										CL		
	F-code bulletin board document									CL	CL		
	Profile list										CL		
	Job memory registration data									CL	CL		
	Arbitrary name – Demo data (HDD)		CL	CL			CL				CL		
	Arbitrary name – Demo data (FLASH)							CL			CL		
	Font (HDD common area)		CL	CL			CL				CL		
	Font (HDD PCL area)		CL		CL		CL				CL		
	Font (HDD PS area)		CL			CL	CL				CL		
	Download font (FLASH)							CL			CL		
	Certificate										CL		
	Language file								CL				
	Automatic distribution setup										CL		
	Communication data save setup										CL		

Initialization Functions Admin Page 2

	Setup item	Administrator setup											
		Network default setting	HDD initialization (All area formatting)	HDD formatting (Common partition)	HDD formatting (PCL partition)	HDD formatting (PS partition)	HDD data complete erase	FLASH initialization	Language initialization	Setup value initialization	Complete erasure of individual personal information	Group counter – Reset *1	Job log deletion
Setup data	Admin password									FR	FR		
	Service password												
	Paper/sort setup									FR	FR		
	Copy function setup									FR	FR		
	Fax function setup									FR	FR		
	F-Code Box									FR	FR		
	Scanner function setup									FR	FR		
	Print function setup									FR	FR		
	Network setup	FR								FR	FR		
	Mail server setup	FR								FR	FR		
	LDAP server setup	FR								FR	FR		
	Secure protocol server setup	FR								FR	FR		
	Management									FR	FR		
	Time									FR	FR		
	User Install									FR	FR		
	User Install (Fax related setup value)									FR	FR		
Job	Fax send data (waiting to be transmitted)									CL	CL		
	Fax receive data (Confidential document box)									CL	CL		
	Certificate print job (Secure Job)		CL	CL			CL				CL		
	Encrypted certificate print job (Encrypted Job)		CL	CL			CL				CL		

Initialization Functions Admin Page 3

	Setup item	Administrator setup											
		Network default setting	HDD initialization (All area formatting)	HDD formatting (Common partition)	HDD formatting (PCL partition)	HDD formatting (PS partition)	HDD data complete erase	FLASH initialization	Language initialization	Setup value initialization	Complete erasure of individual personal information	Group counter – Reset *1	Job log deletion
Log	Billing log						CL				CL		
	Job log (HDD)						CL				CL		CL
	Debug log (HDD)						CL						
	Error log (HDD)						CL						
	Error log (FLASH)												
	Dial history									CL	CL		
	E-mail address history									CL	CL		
	Fax communication result information									CL	CL		
Counter	Group counter (Open to user)											CL	
	Maintenance counter (Life related)												
	Main counter (Dealer tabulation related)												
	Print tabulation password												
FW	Scanner unit F/W (including Fax)												
	NIC-F/W (including Web page)												
Others	Mirror carriage transport mode												
	Scanner factory adjustment												
	Stored image									CL	CL		
	Maintenance switch (Confidential)												

*1 The group counter – Reset is confidential and menu is not open in FCS.

*4 When HDD Disable is set, only administrator can log on.

(Because the access control mode setup values is stored in Flash, but the user information is not stored in HDD.)

Items that can be initialized by the Service Engineer

The initialization operations that can be performed by service engineer are shown below.

Initialization operation	Description
Format HDD (Boot sector erase)	This operation can be executed by selecting the menus: [Service Maintenance] - [System Maintenance] - [Format HDD]. When this operation is executed, the screen exits the menu and initialization of the HDD starts.
Format Flash ROM (System area initialization)	This operation can be executed by selecting the menus: [Service Maintenance] - [System Maintenance] - [Format Flash ROM]. When this operation is executed, the screen exits the menu and formatting of the Flash device that is resident (on-board) installed in the MFP starts.
Administrator password reset	Returns the administrator password that has been set by user, to the default value. This operation can be executed by selecting the menus: [Service Maintenance] - [System Maintenance] - [Change Password] . This setting is executed for the propose of initializing the administrator password by service engineer in the case when user forgets the administrator password.
All Reset	Returns the contents of the EEPROM, FLASH ROM and HDD to the factory shipment setting (factory default) value. This operation can be executed by selecting the menus: [Service Maintenance] - [System Maintenance] - [All Reset]. This setting is executed for the propose of erasing by dealer for an example, the information of the previous user who has been using the MC860, in the case when dealer is going to lend the MC860 to other client.
OKIUSER change	Changes the destination of the MC860. This operation can be executed by selecting the menus: [Service Maintenance] - [System Maintenance] - [OKIUSER].
Country code change	Select the country in which the MC860 is going to be installed. This operation can be executed by selecting the menus: [Service Maintenance] - [Fax Maintenance] - [Country Code].

The following table shows the setup items that can be initialized by the service engineer.

Descriptions regarding description in the table are added.

The gray colored items indicate that the data is stored in the CU side.
The white items indicate that the data is stored in the scanner unit side.

The items with the characters **"CL"** indicate that the registered data will be deleted when this function is executed.

The items with the characters **"FR"** indicate that the data will be returned to the default setting when this function is executed.

Initialization Functions Service Engineer Page 2

Setup item		Service engineer setup					
		Format HDD (Boot sector erase)	Format Flash ROM (System area initialization)	Administrator password reset	All Reset	OKIUSER	Country code change
Registration data	E-mail address registration data		CL		CL		
	Access control information registration data *4	CL			CL		
	Abbrev. dial registration data		CL		CL		
	F-code bulletin board document				CL	CL	CL
	Profile list		CL		CL	CL*5	
	Job memory registration data				CL	CL	CL
	Arbitrary name – Demo data (HDD)	CL			CL		
	Arbitrary name – Demo data (FLASH)		CL		CL		
	Font (HDD common area)	CL			CL		
	Font (HDD PCL area)	CL			CL		
	Font (HDD PS area)	CL			CL		
	Download font (FLASH)		CL		CL		
	Certificate		CL		CL		
	Language file		CL		CL		
	Automatic distribution setup		CL		CL		
	Communication data save setup				CL	CL	

Initialization Functions Service Engineer Page 3

Setup item		Service engineer setup					
		Format HDD (Boot sector erase)	Format Flash ROM (System area initialization)	Administrator password reset	All Reset	OKIUSER	Country code change
Setup data	Admin password			FR	FR	FR	
	Service password				FR	FR	
	Paper/sort setup				FR	FR	
	Copy function setup				FR	FR	
	Fax function setup		FR		FR	FR	FR
	F-Code Box				FR	FR	FR
	Scanner function setup		FR*3		FR	FR	
	Print function setup				FR	FR	
	Network setup		FR		FR	FR	
	Mail server setup		FR		FR	FR	
	LDAP server setup		FR		FR	FR	
	Secure protocol server setup		FR		FR	FR	
	Management				FR	FR	
	Time				FR	FR	FR
	User Install				FR	FR	
	User Install (Fax related setup value)		FR		FR	FR*2	FR*2
Job	Fax send data (waiting to be transmitted)				CL	CL	CL
	Fax receive data (Confidential document box)				CL	CL	CL
	Certificate print job (Secure Job)	CL			CL		
	Encrypted certificate print job (Encrypted Job)	CL			CL		

Initialization Functions Service Engineer Page 4

Setup item		Service engineer setup					
		Format HDD (Boot sector erase)	Format Flash ROM (System area initialization)	Administrator password reset	All Reset	OKIUSER	Country code change
Log	Billing log	CL			CL		
	Job log (HDD)	CL	CL		CL		
	Debug log (HDD)	CL			CL		
	Error log (HDD)	CL			CL		
	Error log (FLASH)		CL		CL		
	Dial history				CL	CL	CL
	E-mail address history				CL	CL	CL
	Fax communication result information				CL	CL	CL
Counter	Group counter (Open to user)				CL		
	Maintenance counter (Life related)						
	Main counter (Dealer tabulation related)				CL		
	Print tabulation password		CL		CL		
F W	Scanner unit F/W (including Fax)						
	NIC-F/W (including Web page)		CL				
Others	Mirror carriage transport mode						
	Scanner factory adjustment						
	Stored image				CL	CL	CL
	Maintenance switch (Confidential)				CL	CL	CL

*2 Only the setups that change their initial values depending on destination or counter code are initialized.
*3. [Filename (standard)] and [E-mail edit fixed phrase] under the menus [Scanner function] - [E-mail setting] are initialized.
*4 When HDD Disable is set, only administrator can log on.
(Because the access control mode setup values is stored in Flash, but the user information is not stored in HDD.)
*5 When destination is changed from Japan (such as "JP1","JPOEM") to overseas (such as “ODA”), the portions in which Japanese language has been input are cleared. When the profile name is Japanese language, the parameters excluding character string are initialized at the same time.

Chapter 3 Troubleshooting Print Quality

3.1 Print Quality Problems Overview

Print-quality defects can be attributed to printer components, consumables, media, internal software, external software applications, and environmental conditions. To successfully troubleshoot print-quality problems, eliminate as many variables as possible. The first step is to generate prints using printable pages embedded in the printer on paper from the Supported Media List. Use paper from a fresh, unopened ream that is acclimated to room temperature and humidity. If the print-quality defect is still present when printing on approved media, then investigate software applications and environmental conditions.

The printers use separate Imaging Units to develop a latent image for each color where the colors are combined on the Transfer Unit to form the final image. In most cases, print-quality defects are the result of one particular component in the print engine, **See the Repeating Defects chart**. When a single component of the Imaging Unit is causing a print quality defect, replace the Imaging Unit.

When analyzing a print-quality defect, first determine if the defect occurs in all colors or only one color and if it is repeating or random. Continuous defects in the **process direction**, such as voids and lines, are the most difficult to diagnose. Inspect the visible surfaces of all rollers for obvious defects. If no defects are observed, replace the Imaging Units, Transfer Unit, and Fuser one at a time until the defect is eliminated.

Defects Associated with Specific Printer Components

Some print-quality problems can be associated with specific assemblies, the most common problems and the associated assemblies are listed below. Also, refer to the printer's Troubleshooting Print-Quality Problems pages or a specific print-quality troubleshooting procedure for more information.

Imaging Unit

- Streaks in Process Direction (in the direction of feed, parallel with paper travel)
- Banding in Scan Direction (across the page, perpendicular to paper travel)
- Uneven Density
- Voids
- Repeating Defects
- Mis-registration

Transfer Unit

- Toner on the back side of the printed page (simplex mode)
- Light Prints
- Repeating Defects
- Mis-registration - only when there is obvious damage to the belt.

Fuser

- Hot or Cold Offsetting
- Repeating Defects
- Dark Streaks in Process Direction

LED Head

- Streaks in the Process Direction
- Uneven Density in the Scan Direction

Test Prints

A variety of test prints are available to aid in determining the quality of output from the printer and to assist in troubleshooting. See sections 2.7.3 and 2.7.5 for details.

3.2 Using New Consumable Units for Testing Purposes

The MC-860 / CX2633 will allow you to utilize new consumable units for print quality diagnosis and troubleshooting purposes.

Note! When using new units (Drum, Transfer Belt, Fuser) to assist in troubleshooting, you should **temporarily** set the printer to **"Factory Mode"** (See Section 2.7.8). Setting to factory mode will allow you to use brand new units for testing purposes without cutting the fuse.

Caution! Be sure to **reset the printer to "Shipping Mode"** when testing is complete. Leaving the printer in Factory Mode may cause erratic operation of the MFP.

3.3 Things to observe when analyzing Test Pages

- Streaks in Process Direction (in the direction of feed, parallel with paper travel)
- Banding in Scan Direction (across the page, perpendicular to paper travel)
- Uneven Density
- Voids
- Repeating Defects
- Mis-registration

Note: Consult the "Repeating Defect Spacing Chart" below.

Repeating Defects Spacing

Component	Defect Spacing	Defect Location
Imaging Drum	94.3 mm	Imaging Unit
Developer Roller	39.7 mm	Imaging Unit
Charge Roller	37.7 mm	Imaging Unit
Supply Roller	58.4 mm	Imaging Unit
Fuser Belt	125.5 mm	Fuser
Heat Roller	87.7 mm	Fuser
Transfer Roller	50.3 mm	Transfer Unit

3.4 Print-Quality Troubleshooting

Light Prints in All Colors

The overall image density is too light in all colors. If the image is light in only one color, see "Light Print in Only One Color".

Initial Actions to Perform

- Perform Initial Actions from Maintenance Procedures in Chapter 1.
- Verify the media used is supported by this printer.
- Verify the media settings are correct at the Control Panel.
- Print the ID Check Pattern (Reports – Print – ID Check Pattern) and Demo page (Reports – Information – Demo Page) to see if it is an application problem.
- Perform isolation Test Prints (Section 2.7.3).
- Run the Density Error Correction Test in Section 2.7.5.

Areas of the Printer that Apply

- Imaging Unit
- LED Head
- Transfer Unit
- HVPS
- PU Board

Troubleshooting Steps	Resolution
1. Verify all packaging material has been removed form the toner cartridges	Yes – Go to Step 2 No - Remove packing material
2. Remove the Imaging Units and the Transfer Unit and check for toner contamination on the high voltage contacts. Are the contacts contaminated?	Yes – Clean the contacts No - Go to Step 3
3. Are the LED Heads dirty? Clean the heads with a clean, lint-free cloth. Did this correct the problem?	Yes – Complete No - Go to Step 4
4. Are the wiring harnesses on the LED Heads undamaged, properly routed and seated?	Yes – Repair / Replace Harnesses No - Go to Step 5
5. Inspect the high-voltage wiring harness. Reseat the wiring Harness. Did this correct the problem?	Yes – Complete No - Replace in the following order: Transfer Unit / Imaging Unit Sensor Board / HVPS / PU Board

Light Prints in Only One Color

Only one color; yellow, magenta, cyan, or black, is too light on the printed image.

Initial Actions to Perform

- Perform Initial Actions from Maintenance Procedures in Chapter 1.
- Print the ID Check Pattern (Reports – Print – ID Check Pattern) and Demo page (Reports – Information – Demo Page)
- Perform isolation Test Prints (Section 2.7.3).
- Check that the Toner Cartridge pull strip is completely removed from the affected color.
- Run the Density Error Correction Test in Section 2.7.5.

Areas of the Printer that Apply

- Imaging Unit
- LED Head
- Transfer Unit
- HVPS
- PU Board

Troubleshooting Steps	Resolution
1. Verify all packaging material has been removed form the toner cartridges	Yes – Go to Step 2 No - Remove packing material
2. Print the 100% Solid Fill test print. Can the problem be isolated to one primary color?	Yes – Go to Step 3
3. Remove the Toner Cartridge and check for toner starvation in the Imaging Unit. Is there evidence of toner starvation	Yes – Replace the Toner Cartridge No - Go to Step 4
4. Remove the Imaging Units and the Transfer Unit and check for toner contamination on the high voltage contacts. Are the contacts contaminated?	Yes – Clean the contacts No - Go to Step 5
5. Are the LED Heads dirty? Clean the heads with a clean, lint-free cloth. Did this correct the problem?	Yes – Complete No - Go to Step 6
6. Swap the LED Head of the problem color with any other LED Head. Print a Solid Fill Test Pattern. Has the problem moved with the LED Head?	Yes – Replace the LED Head No - Go to Step 7
7. Are the wiring harnesses on the LED Heads undamaged, properly routed and seated?	Yes – Reseat the wiring Harnesses No - Replace in the following order: Transfer Unit / LVPS / PU Board

Blank Prints

Initial Actions to Perform

- Perform Initial Actions from Maintenance Procedures in Chapter 1.
- Perform isolation Test Prints (Section 2.7.3) to isolate the problem between the CU Board and the PU Board.

Areas of the Printer that Apply

- Imaging Unit
- LED Head
- PU Board

Troubleshooting Steps	Resolution
1. Print a 100% Solid Fill Test Print. Is the entire test print blank?	Yes – Go to Step 2 No - Have the customer check there application and printer settings.
2. Remove the Toner Cartridge and check for toner starvation inside the Imaging Unit. Is there evidence of toner starvation?	Yes – Replace the Toner Cartridge. No - Go to Step 3
3. Are the LED Heads dirty? Clean the heads with a clean, lint-free cloth. Did this correct the problem?	Yes – Complete No - Go to Step 4
4. Are the wiring harnesses on the LED Heads undamaged, properly routed and seated?	Yes – Repair / Replace Harnesses No - Go to Step 5
5. Inspect the high-voltage wiring harness. Reseat the wiring Harness. Did this correct the problem?	Yes – Complete No - Replace in the following order: Transfer Unit / LVPS / Imaging Unit Sensor Board / HVPS / PU Board

Mottled or Splotchy Prints

The print image has a mottled appearance.

Note! This defect is known to occur at low humidity, and when printing on heavy weight media.

Initial Actions to Perform

- Perform Initial Actions from Maintenance Procedures in Chapter 1.
- Verify the media used is supported by this printer.
- Verify the media settings are correct at the Control Panel.
- Print the ID Check Pattern (Reports – Print – ID Check Pattern) and Demo page (Reports – Information – Demo Page) to see if it is an application problem.
- Perform isolation Test Prints (Section 2.7.3).
- Run the Density Error Correction Test in Section 2.7.5.

Areas of the Printer that Apply

- Imaging Unit
- LED Head
- HVPS
- PU Board

Troubleshooting Steps	Resolution
1. Ensure the media is approved and the Control Panel and driver settings match the loaded media. Try different media to verify consistent, reproducible problem.	Yes – Go to Step 2 No - Have the customer load approved media or correct the settings.
2. Print the configuration page to verify the operating environment. NOTE: Low humidity, less than 20% relative humidity can cause mottling on prints.	Yes – Go to Step 3 No - Advise customer regarding the printer's environmental specifications.
3. Check for toner contamination on the high voltage contacts. Remove the Imaging Units and Transfer Unit. Is there contamination?	Yes – Clean the contacts No - Go to Step 4
4. Check / Replace the Transfer Unit. Is the problem resolved?	Yes – Complete No - Replace in the following order: LVPS / HVPS / PU Board

Unexpected Colors

The colors produced by the printer are dramatically different from the color expected.

Initial Actions to Perform

- Perform Initial Actions from Maintenance Procedures in Chapter 1.
- Verify the media used is supported by this printer.
- Verify the media settings are correct at the Control Panel.
- Print the ID Check Pattern (Reports – Print – ID Check Pattern) and Demo page (Reports – Information – Demo Page) to see if it is an application problem.
- Perform isolation Test Prints (Section 2.7.3).
- Run the Density Error Correction Test in Section 2.7.5.

Areas of the Printer that Apply

- Imaging Unit
- HVPS
- PU Board

Troubleshooting Steps	Resolution
1. Print the ID Check Pattern / Demo Page and evaluate the colors. Are the colors on the test pages representative of what the customer expects?	Yes – Complete, the problem is with the Customer application. No - Go to Step 2.
2. Print a configuration page to check the Imaging Unit life remaining. If the Imaging Unit is reaching it's maximum image count, this can reduce print-quality.	Yes – replace the Imaging Unit. No - Go to Step 3.
3. Print the 100% Solid Fill Test pattern and check for any missing colors. Is the problem with a single color?	Yes –Go to Step 4. No - Go to Step 6
4. Is there debris or contamination on the LED Head?	Yes – Clean with a dry, lint free cloth. No - Go to Step 5
5. Swap the LED Head of the problem color with any other LED Head. Print a Solid Fill Test Pattern. Has the problem moved with the LED Head?	Yes – Replace the defective LED Head No – Go to Step 6
6. Swap the Imaging Unit of the problem color with any other Imaging Unit. NOTE: Remove the keys before swapping. Print a Solid Fill Test Pattern to check for defects. Has the problem color moved with the Imaging Unit?	Yes – Replace the Imaging Unit No - Go to Step 7.
7. Check for toner contamination on the high voltage contacts. Remove the Imaging Units and the Transfer Unit and Is there contamination on the contacts?	Yes – Clean the contacts. No - Go to Step 8.
8. Are the wiring harnesses on the LED heads undamaged, properly routed and seated?	Yes – Go to Step 9. No - reseat the wiring harness.
9. Inspect the high-voltage wiring harness.	Yes – reseat the wiring harness. No - Replace in the following order: Transfer Unit / LVPS / Imaging Unit Sensor Board / HVPS / PU Board

Repeating Bands, Lines, Marks, or Spots

This is usually caused by a damaged roller. In some instances, the spots may be dark instead of white and are repeated.

Initial Actions to Perform

- Perform Initial Actions from Maintenance Procedures in Chapter 1.
- Verify the media used is supported by this printer.
- Verify the media settings are correct at the Control Panel.
- Print the ID Check Pattern (Reports – Print – ID Check Pattern) and Demo page (Reports – Information – Demo Page) to see if it is an application problem.
- Perform isolation Test Prints form Section 2.7.3.
- Run the Density Error Correction Test in Section 2.7.5.

Areas of the Printer that Apply

- Imaging Unit
- Fuser
- Transfer Unit

Troubleshooting Steps

Repeating Defects Spacing

Component	Defect Spacing	Defect Location
Imaging Drum	94.3 mm	Imaging Unit
Developer Roller	39.7 mm	Imaging Unit
Charge Roller	37.7 mm	Imaging Unit
Supply Roller	58.4 mm	Imaging Unit
Fuser Belt	125.5 mm	Fuser
Heat Roller	87.7 mm	Fuser
Transfer Roller	50.3 mm	Transfer Unit

Mis-Registration, Color Layers Not Correctly Registered

The image appears blurred and the primary colors are not aligning correctly onto the final image.

Initial Actions to Perform

- Perform Initial Actions from Maintenance Procedures in Chapter 1.
- Verify the media used is supported by this printer.
- Verify the media settings are correct at the Control Panel.
- Print the ID Check Pattern (Reports – Print – ID Check Pattern) and Demo page (Reports – Information – Demo Page) to see if it is an application problem.
- Perform isolation Test Prints (Section 2.7.3).
- Run the Color Registration Error Correction Test (Section 2.7.4)

Areas of the Printer that Apply

- Imaging Unit
- LED Heads
- Color Registration Sensors
- Transfer Unit
- HVPS
- CU Board
- PU Board

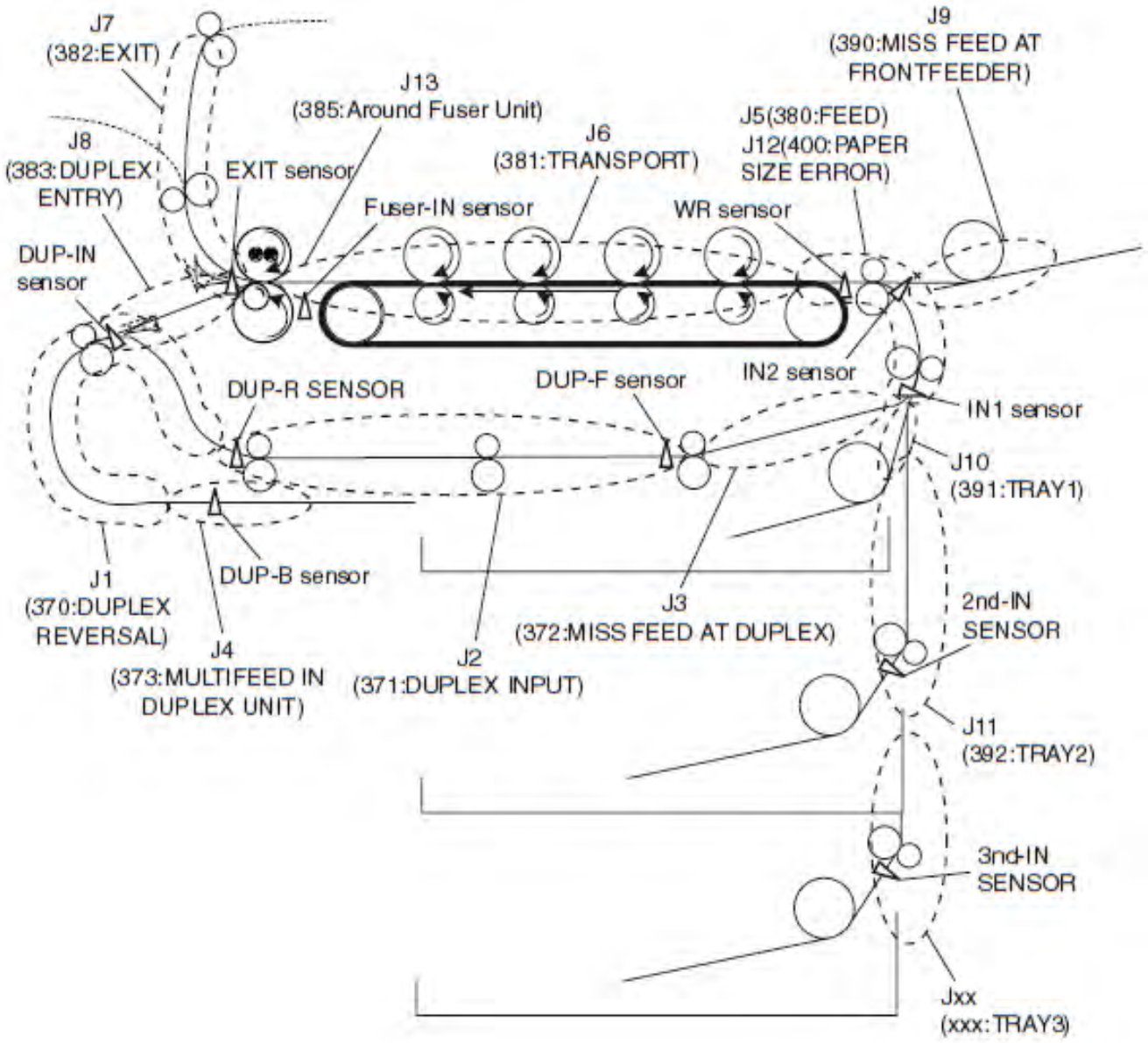
Troubleshooting Steps	Resolution
1. Cycle power to the printer. Did this correct the problem?	Yes – Complete No - Go to Step 2.
2. **Process Direction:** Remove the Imaging Units and Transfer Unit. Inspect the Color Registration Sensors for dirt, debris or toner build-up. Are the sensors clean?	Yes – Go to Step 3. No - Clean the sensors.
3. Check the Color Registration Shutter. Run the Service Diagnostics Registration Shutter test. Is the shutter functioning correctly?	Yes – Go to Step 4. No - Replace the solenoid or harness.
4. Inspect the Transfer Unit for tears or damage on the edges of the belt. Is the belt damaged?	Yes – Replace Transfer Unit. No - Go to Step 5.
5. Check the Drum drive gears for missing or worn gear teeth. Run the Service Diagnostics Imaging Unit Motors tests to visually inspect the gears. Are the gears working correctly?	Yes – Go to Step 6. No - Replace the Drum Drive Gear.
6. Replace the Registration Sensor Board. Did this fix the problem?	Yes – Complete. No - Go to Step 8.
7. Replace the PU Board EEPROM. Did this fix the problem?	Yes – Complete. No - Replace the PU Board
8. **Scan Direction:** Use the configuration page to identify the problem color. Remove the Imaging Unit of the suspect color. Inspect the grounding shaft. Has the shaft shifted?	Yes – Replace the Imaging Unit. No - Go to Step 9.
9. Check the Imaging Unit guides for debris or damage. Are the guides damaged or obstructed?	Yes – Clean the guides on the chassis or replace assembly. No - Go to Step 10.
10. Check the Color Registration Sensors for dirt or debris. Be sure to check in and around the registration shutter.	Yes – Clean the sensor. No - Go to Step 11.
11. Check the Color Registration Shutter. Run the Service Diagnostics Registration Shutter test. Is the shutter functioning correctly?	Yes – Go to Step 12. No - Replace the solenoid or harness.
Continued on Next Page	

12. Are the LED Head ribbon cables undamaged, properly routed and seated?	Yes – Go to Step 13. No - Reseat, correctly route or replace the wiring harness.
13. Swap the LED Head of the problem color with any other LED Head. Print a Supplies page. Has the problem moved with the LED Head?	Yes – Replace the defective LED Head No - Go to Step14.
14. Replace the Registration Sensor Board. Did this fix the problem?	Yes – Complete. No - Go to Step15.
15. Replace the PU Board EEPROM. Did this fix the problem?	Yes – Complete. No - Replace the PU Board

4.1 Troubleshooting Paper Feed

4.1.1 Paper Feed Sensor Details

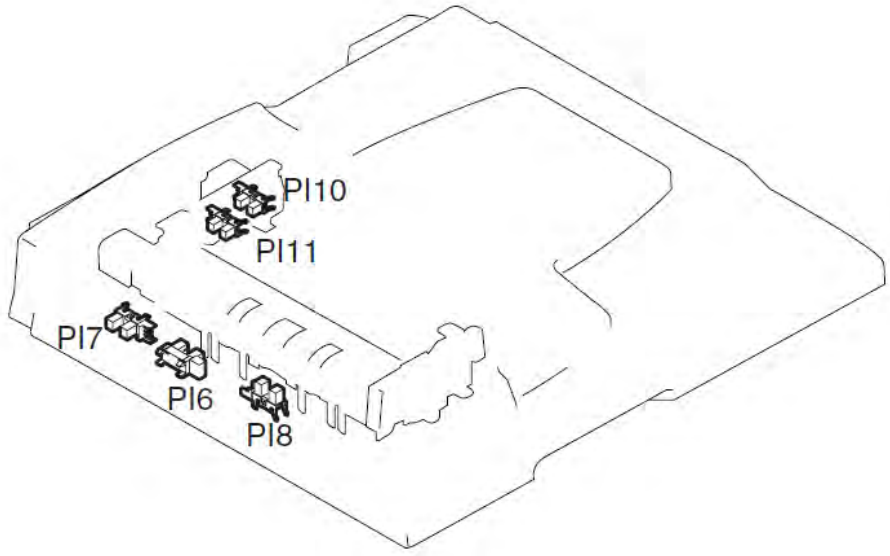
Diagram showing paper detection sensors in the print engine



Paper Jam Code Table for the print engine
(Codes may or may not appear dependent on model and market).

Code Number	Jam Location	Related Sensors
370	Duplex reversal	DUP-IN, DUP-R
371	Duplex input	DUP-F, DUP-R
372	Feed error at Duplex	IN1
373	Multi-feed in Duplex Unit	DUP-B
380	Feed	IN2, WR
381	Transport	IN1, IN2, WR, Fuser-IN, EXIT
382	Exit	EXIT, Fuser-IN
383	Duplex entry	EXIT, DUP-IN, DUP-R
385	Around Fuser Unit	Fuser thermister
390	Feed error at front feeder	IN2, WR
391	Tray1	IN1
392	Tray2	2nd-IN
400	Paper size error	IN1

Diagram showing paper detection sensors in the RADF



Note! The RADF detects a jam using the sensors shown above. Document jam check timings are stored in the ROM on the Main PCB to check whether a jam has occurred according to presence/absence of the document at the relevant sensor position.
There are no jam codes generated for the RADF

Sensor Location Table for the RADF

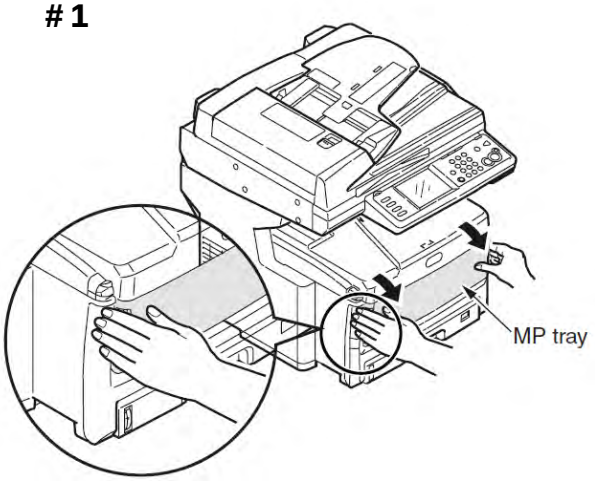
Sensor	Description
PI 10	Cover open/close sensor
PI 11	Document set sensor
PI 16	Delivery reversal sensor
PI 17	Read sensor
PI 18	Registration paper sensor

4.1.2 Jam Removal Procedure

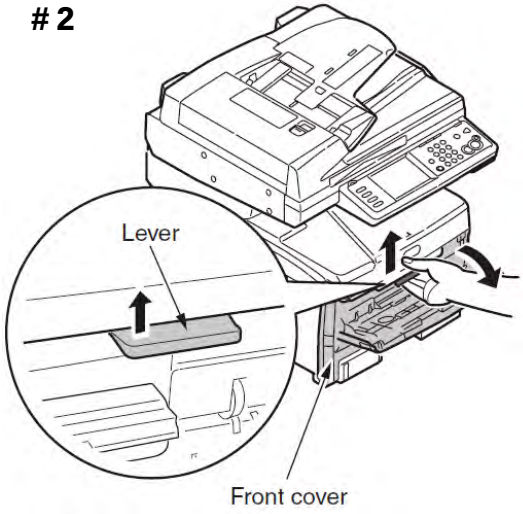
Front Cover Block (Code: 372, 380, 390, 391, 400)

Open the front cover. If either top end or rear of a jammed paper is visible, draw out the jammed paper gently with care. When code 400 occurs, jammed paper may be unloaded automatically sometime. In such a case, open and close the front cover. The MFP can be recovered from the error.

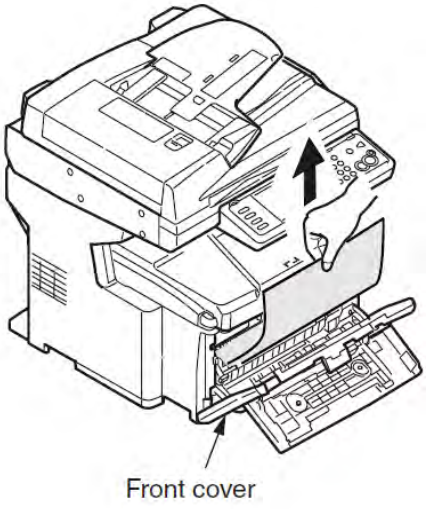
 # 1



 # 2



 # 3



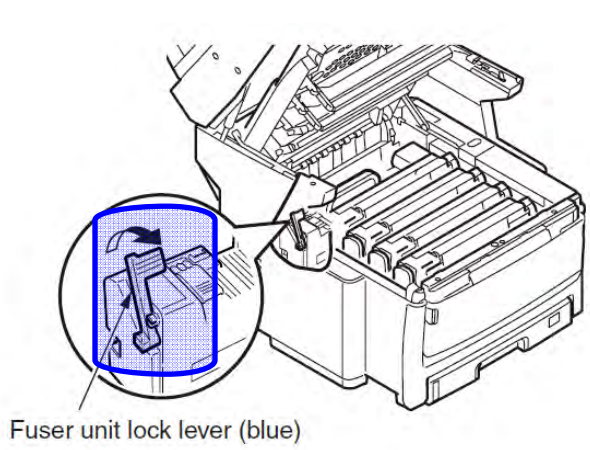
Fuser Unit (Code: 381, 382, 383, 385, if applicable)

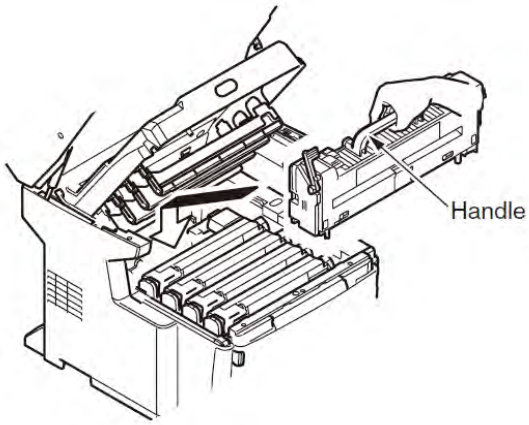
Caution! The fuser unit gets very hot. Be very careful not to touch the fuser unit with your hands.

(1) Raise the scanner and open the top cover.

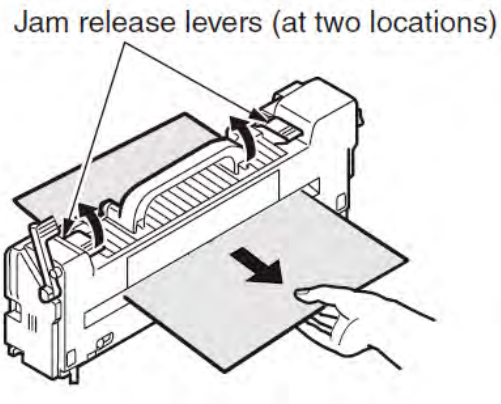
(2) Raise the fuser unit lock lever (lever shown in blue) in the direction shown by the arrow.

(3) Hold the handle and remove the fuser unit and place it on a flat workbench.



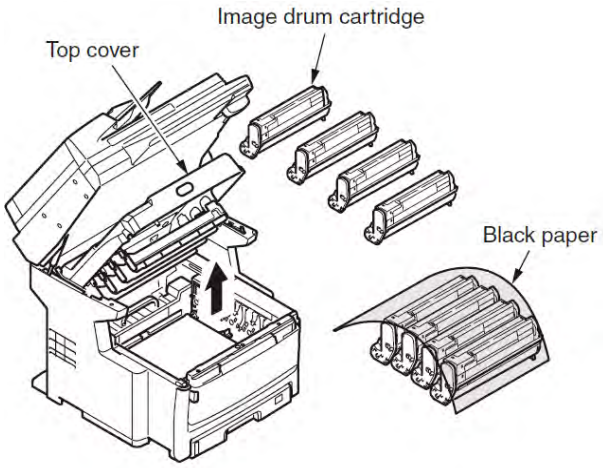


(4) Raise the jam release levers (at two locations) and draw out the jammed paper in the direction (direction is strictly specified) shown by the arrow (toward front of a printer) gently with care.



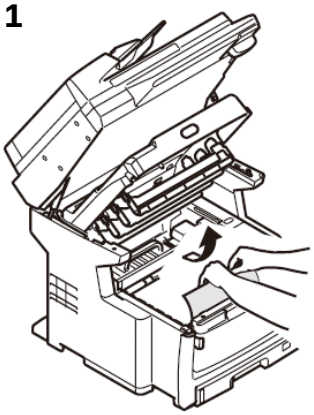
(5) Hold the handle and return the fuser unit back inside of a printer gently.

(1) Remove the four image drum cartridges and place them on a flat workbench.
(2) Cover the removed image drum cartridge with a black paper.

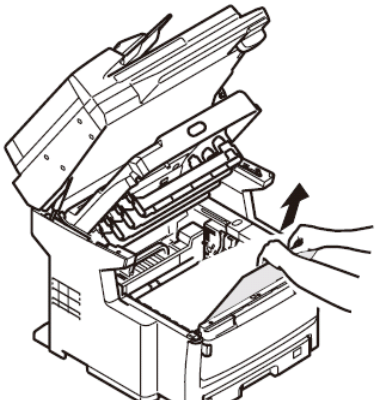


(3) Draw out the jammed paper gently with care.

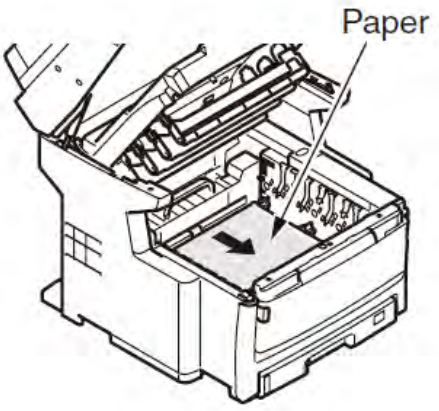
 # 1



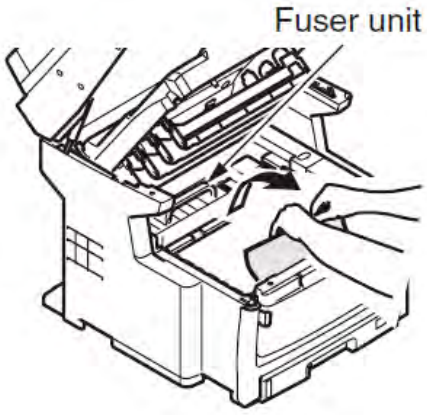
 # 2



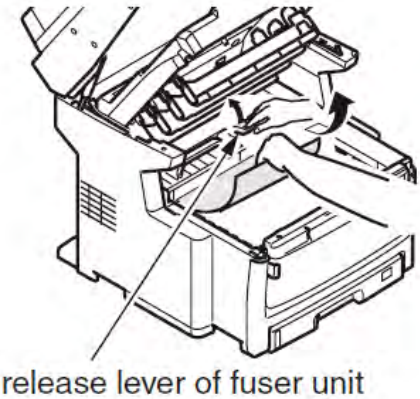
 # 3



 # 4



 # 5

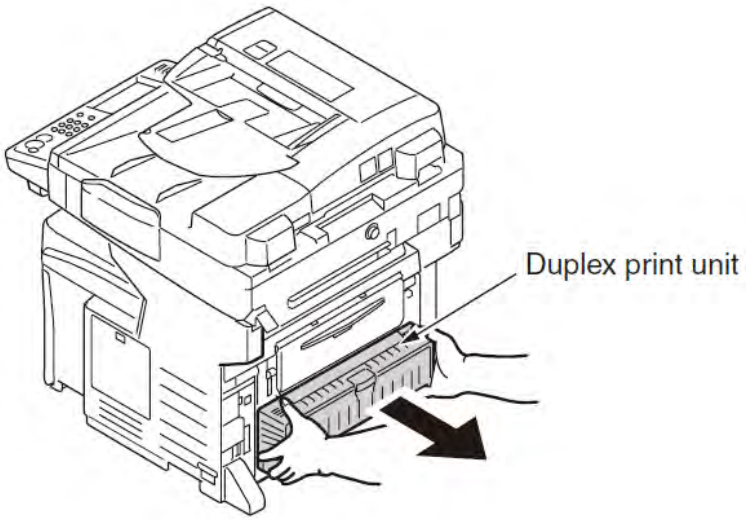


(4) Return the image drum cartridges back to the original positions.

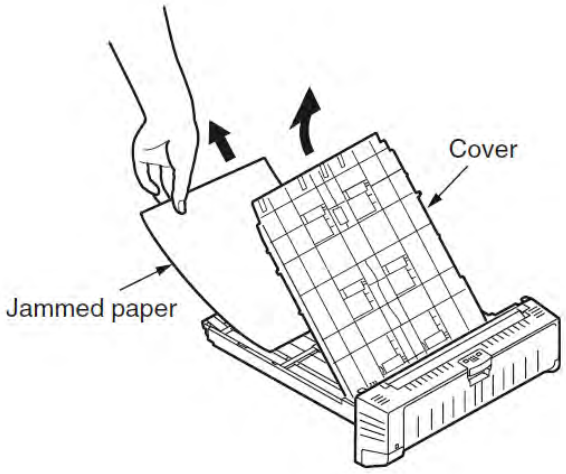
Duplex Unit (Code: 370, 371, 373, if applicable)

Note! Before removing the duplex unit, be sure to turn OFF the power of the MFP.

(1) Remove the Duplex Unit.
(2) Press the jam release lever of the duplex unit to open the duplex unit cover.



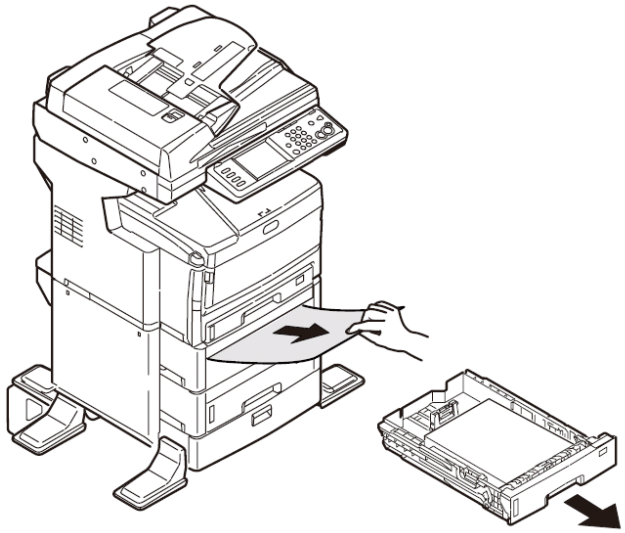
(3) Draw out the jammed paper gently with care.



Second Tray Unit (Option) (Code: 391, 393, if applicable)

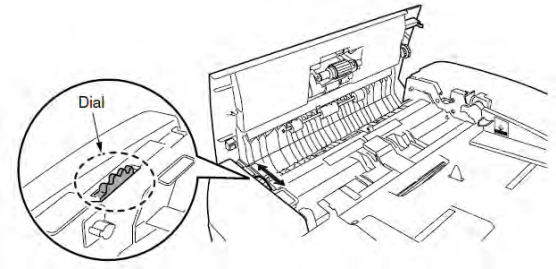
This manual describes the jam clear method using tray 2 as an example. Tray 3 can also be cleared using the same method.

(1) Remove the paper tray from the second tray unit, and remove the paper.
(2) After the jammed paper is removed, open the MP tray, push up the center lever. Then the front cover can be opened or closed.

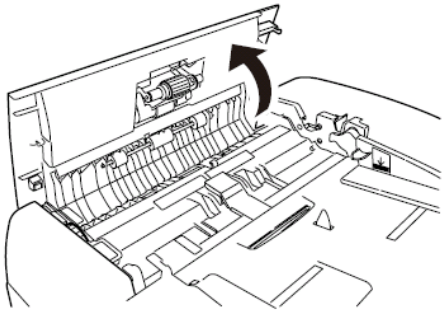


RADF Unit

Note! If the jammed paper cannot be removed easily, do not remove with excessive force. Rotate the dial until the jammed document can be easily removed. If an attempt is made to pull out the jammed paper with force, the jammed document may be tear.

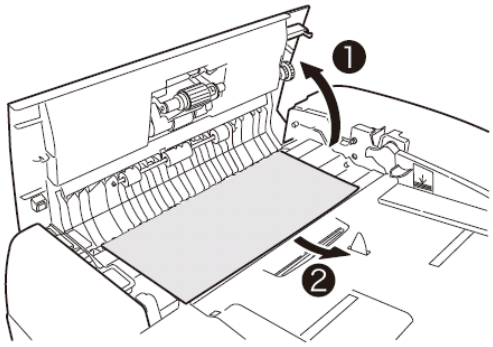


(1) Raise the document cover OPEN lever and open the document cover.



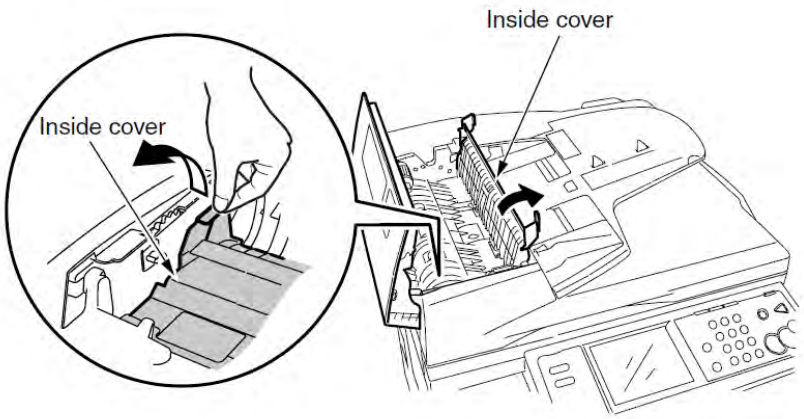
(2) Draw out the jammed paper gently with care. If the jammed paper cannot be removed, go to step (4).

Note! Do not pull the document out with excessive force.

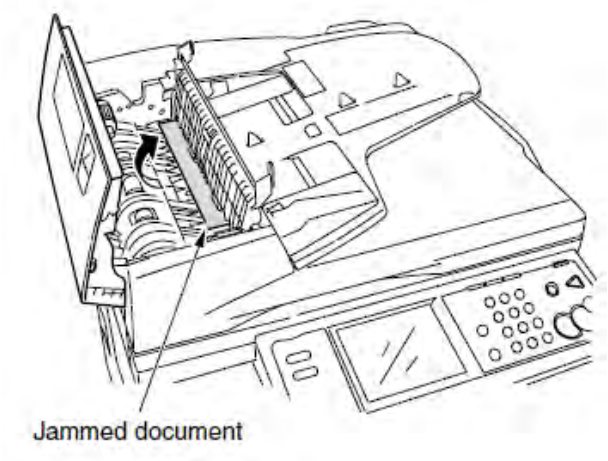


(3) When the jammed paper is removed, go to step (9).

(4) Open the inside cover.

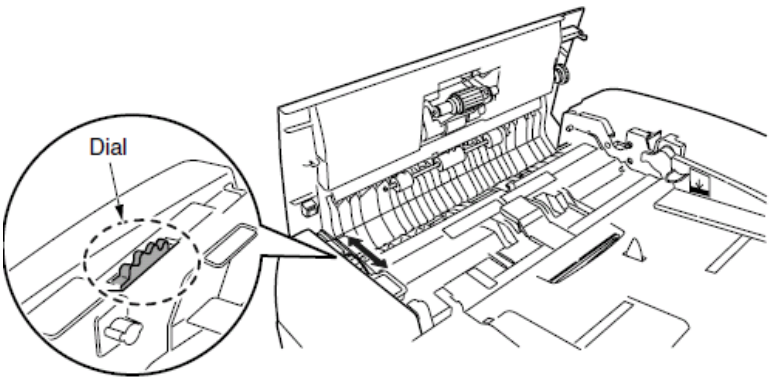


(5) If top end of the jammed paper is visible, pull it out gently.
If top end of the jammed paper is not visible, close the inside cover and go to step 3.

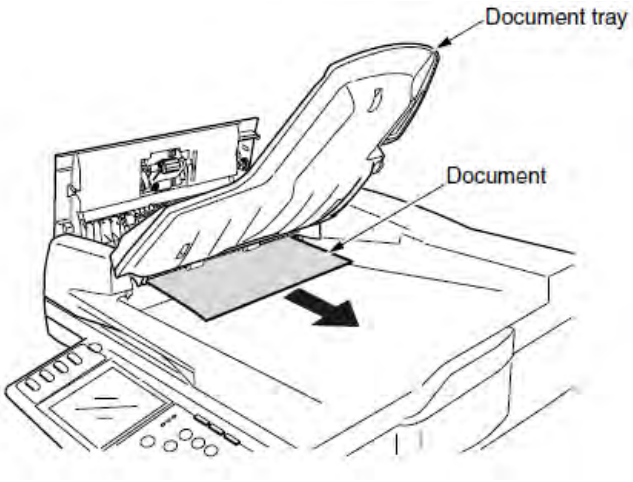


(6) When the jammed paper is removed, close the inside cover and go to step 9.

(7) Rotate the dial so that the jammed document is unloaded.



(8) Raise the document tray. Remove the jammed document gently.



(9) Close the document cover.

Troubleshooting Self Diagnostic Codes

Self Diagnostic Error Codes

Code	Cause / Description	Remedy
002 - 005	CPU Exception	Power Off/On. If RAM DIMM is installed, remove and Power OFF/ON. Re-mount RAM DIMM / Replace RAM DIMM Replace the CU Board
020	CU ROM Hash Check Error	Power OFF/ON. Replace the CU PCB
030	CU Resident RAM Check Error	Power OFF/ON. CU PCB replacement
031	CU Optional RAM Check Error. Is installation of the RAM DIMM normal? Does the MFP recover from the error when the RAMDIMM is replaced?	Re-mount RAM DIMM / Replace RAM DIMM Replace the CU Board
040	CU EEPROM Error	Re-mount RAM DIMM / Replace RAM DIMM Replace the CU Board
041	CU FLASH Error CU PCB FLASH ROM Error	Replace the CU Board
042	File Flash System Error, CU PCB FLASH ROM Error. Failure to access to the Flash ROM that is directly soldered to the CU PCB.	Replace the CU Board
051	CU Fan Error, CPU cooling fan error on CU PCB. Is the CU fan connector connected normally? Does the MFP recover from the error when the fan is replaced?	Re-connect fan. Replace fan. Replace TBM PCB.
054	Communication error between the Controller and the Scanner Unit is detected.	If the MFP does not recover even when the power is turned OFF and back ON, check the connection between the Scanner and Printer.
055	Scanner unit not detected. The CU FW has detected that the Scanner Unit cannot be recognized though it had been recognized when the power was turned ON.	If the MFP does not recover even when the power is turned OFF and back ON, check the connection between the Scanner and Printer.
056	Hard disk drive is not installed. Does the MFP recover to normal operation after hard disk is installed and the power is turned OFF once and back ON?	Replace Hard Disk Drive. Replace CU PCB
057	Scanner command communication timeout	Replace Scanner Main PCB Replace CU PCB
058	Internal error is detected in the scanner controller.	Replace Scanner Main PCB
070	Postscript core error. Error is detected inside the postscript core.	

Self Diagnostic Error Codes

Code	Cause / Description	Remedy
072	Engine I/F Error. I/F error between PU-CU. Is CU Assembly installed correctly?	Replace the CU Board Replace the PU Board
073	Video Error. Error is detected when expanding of the video data. (Illegal data is received.)	Decrease resolution, and execute printing again. Replace the CU PCB
074	Video Error. Error is detected during expanding of the image data.	Decrease resolution, and execute printing again. Replace the CU PCB
075	Video Error. Error is detected during expanding of the image data.	Replace the CU Board
081	Parameter matching check error. EEPROM or Flash cannot read/write normally.	Replace the CU Board
104	Engine EEPROM read/write error is detected.	Replace the PU Board
106	Engine control logic error.	Replace the PU Board
111	Duplex unit of another model is detected.	Install the correct Duplex unit.
112	The 2nd tray of another model is detected.	Install the correct 2nd tray.
113	The 3rd tray of another model is detected.	Install the correct 3rd tray.
121	High voltage power supply I/F error. Is the cable between PU PCB and High voltage power supply connected normally? Is there defective contact?	Check for defective contact in the high voltage system. Replace the High voltage power Supply.
122	Low voltage power supply fan error. Does the fan in the low voltage power supply (bottom right on the front) operate normally? Is the fan connector connected normally?	Confirm connection of the fan connector. Replace fan motor Replace PU PCB
123	Environment humidity abnormal/ Humidity sensor is not connected.	Power OFF/ON. Replace the Control panel PCB
124	Environment temperature abnormal	Power OFF/ON. Replace the Control panel PCB
126	Dew condensation is detected in MFP. It can easily occur when the MFP is brought indoors directly from outdoors. Leave the MFP for two hours under normal room temperature. Then, turn OFF the power and back ON. Does the error reoccur?	Power OFF/ON. Replace the Control panel PCB
127	Fixing/ ventilation fan error	Confirm connection of the fan connector. Replace fan motor Replace PU PCB
128	**05:** Fixing unit end cooling fan error. **07:** Cooling fan on the side of the power supply block (side fan) error	Confirm connection of the fan connector. Replace fan motor Replace PU PCB

Self Diagnostic Error Codes

Code	Cause / Description	Remedy
131 - 134	LED head detection is abnormal. **(131 =Y, 132 = M, 133 = C, 134= K)** Is the LED head installed normally? Is the LED HEAD FUSE blown?	Install the LED head unit properly. Check the LED HEAD FUSE. Turn OFF the power once and back ON. Replace LED head unit For the fuse check method, refer to section 2.7.8.
142	ID Up/Down Position detection error.	Reinstall the ID units. Turn OFF the power and back ON. Replace the ID UP/DOWN sensor.
150 - 153	ID unit fuse is blown. **(150 = Y, 151 = M, 152= C, 153 = K)**	Reinstall the ID unit. Turn OFF the power and back ON. Replace ID Unit Check the cable connection between PRZ PCB and PU PCB. Replace PU PCB
154	Belt unit fuse is blown.	Reinstall the Belt unit. Turn OFF the power and back ON. Check the cable connection Replace Belt Unit Replace PU PCB
155	Fuser unit fuse is blown.	After cleaning the connectors of the Fuser, re-install it. Check the cable connection Replace Fuser Replace PU PCB
160 - 163	Toner sensor detection is defective. **(160= Y, 161 = M, 162 = C, 163= K).** Is the toner cartridge installed? Is the toner lock lever set?	Rotate the toner lock lever that fixes the toner cartridge to the locking position. Turn OFF the power and back ON. Replace the toner sensor Assy.
167 - 169	Thermistor Slope Error / Compensation Thermistor Error	After cleaning the connectors of the Fuser, re-install it. Replace Fuser Replace PU PCB
170 / 171	Short-circuit or open circuit of the Fuser unit thermistor is detected.	After cleaning the connectors of the Fuser, re-install it. Replace Fuser Replace PU PCB
172 - 177	Fuser unit thermistor detected abnormal temperature. (High or low temperature)	After cleaning the connectors of the Fuser, re-install it. Replace Fuser Replace Low voltage power supply Replace PU PCB
181 / 182	Option unit I/F error (181 =Duplex Unit, 182 = Option Tray)	Turn OFF the power and back ON. Check connection of the option connector. Replace the option unit.
190	System memory overflow.	Turn OFF the power and back ON. Install the add-on RAM DIMM Replace the add-on RAM DIMM
200 - 202	PU Firmware Download Error	Turn OFF the power and back ON. Reload PU Firmware
203 – 208 214	CU program error. CU program executed illegal process.	Check the connection between CU PCB and PU PCB. Replace CU PCB
209	Custom Media Type table download has failed.	Turn OFF the power and back ON. Reload Firmware

Self Diagnostic Error Codes

Code	Cause / Description	Remedy
231	RFID Reader is not installed. RFID read device error	Check connections of the RFID R/W PCB. Replace the RFID R/W PCB Replace the P6X PCB.
901 - 904	Belt temperature is abnormal. **901:** Short circuit. **902:** Open circuit. **903:** High temperature. **904:** Low temperature. Is the cable between the belt thermistor and high voltage PCB connected normally?	Re-connect the cable properly. Turn OFF the power and back ON. Replace the Belt thermistor
918	Duplex FAN Alarm. Duplex internal FAN error.	Check that the Duplex unit is installed properly. Check that the FAN is connected properly. Replace the FAN.
923	Black image drum lock error. K ID does not rotate properly.	Check that the K ID is installed properly. Replace the K ID unit. Replace the K ID motor.
928	Fuser motor lock error. Fuser does not rotate properly.	Check that the Fuser is installed properly. Replace the fuser unit. Replace the fuser motor.
980	Media jamming error around the fuser. Media is jammed by entangling around the fuser.	Replace the fuser unit.